Vol. XVII. AUGUST 23rd, 1906. No. 8.

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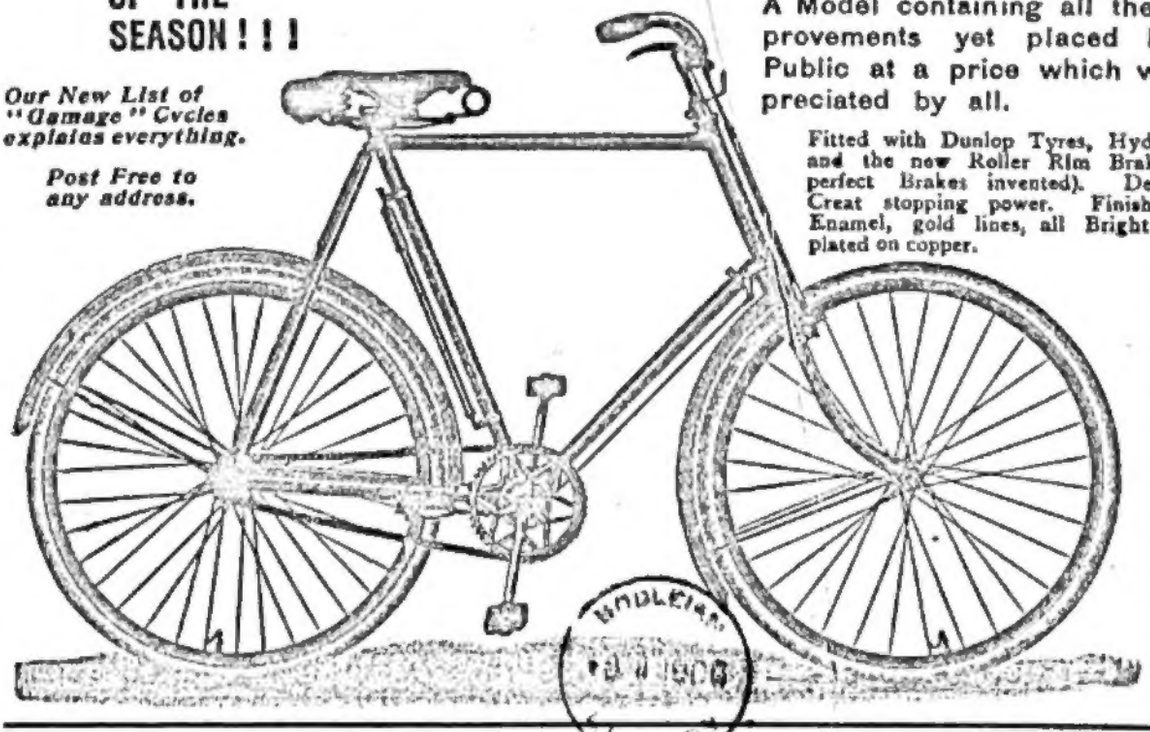

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Jiu Jitsu.

A complete description of this famous Japanese system of self-defence. Each move thoroughly explained and illustrated with numerous full-page pictures of Messrs. A. Minami and K. Koyama, two of the most famous exponents of the art of Jiu Jitsu, who posed especially for this book.

Dumb-Bells.

The Author, Mr. G. Bojus, was formerly superintendent of physical culture in the Elizabeth (N.J.) public schools, instructor at Columbia University (New York), instructor for four years at the Columbia summer school, and is now proprietor of the Park Place Gymnasium, at 14, Park Place, New York City. The book contains 200 photographs of all the various exercises, with the instructions in large, readable type. It should be in the hands of every teacher and pupil of physical culture, and is invaluable for home exercise as well.

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By Dr. Luther Halsey Gulick, Director of Physical Training in the New York public schools. Anyone who is looking for a concise and complete course of physical education at home would do well to procure a copy of this book. Ten minutes' work as directed is exercise anyone can follow. It already has had a large sale, and has been highly commended by all who have followed its instructions. Nearly 100 pages of illustrations and 100 of text.

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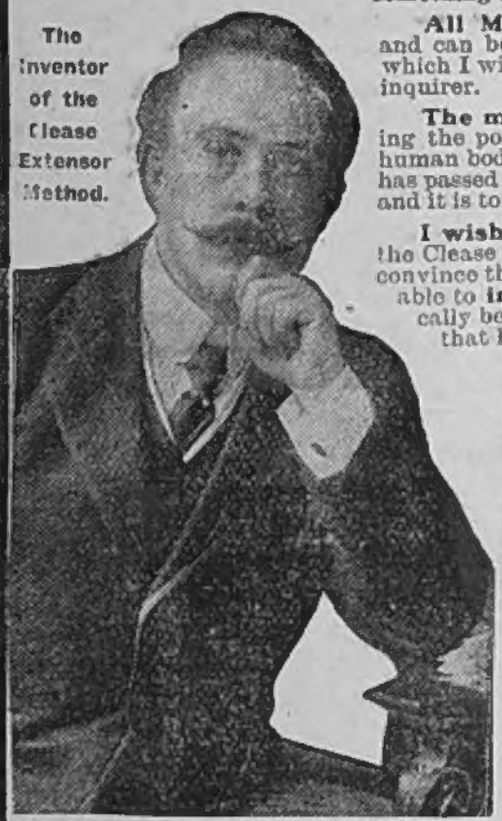

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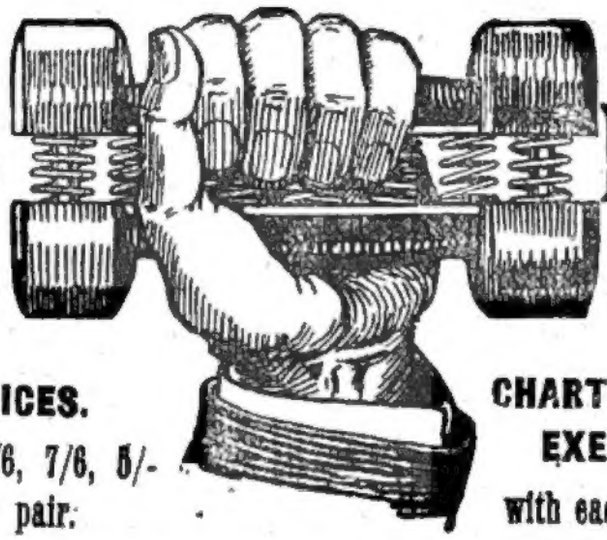

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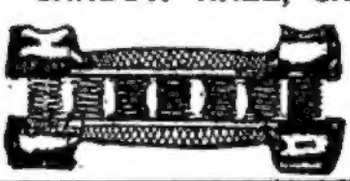

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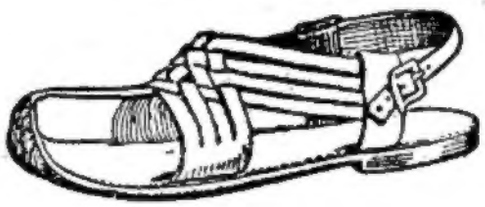

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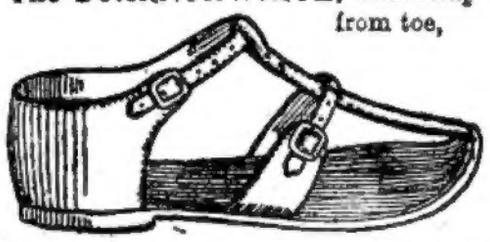

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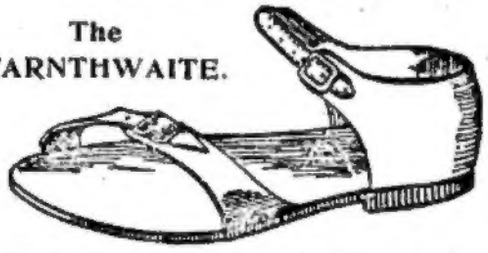

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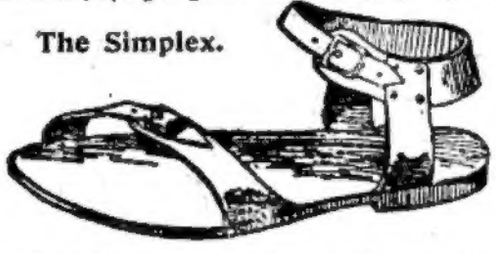

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SANDOW'S MAGAZINE

. . . OF . . .

PHYSICAL CULTURE.

EDITOR: EUGEN SANDOW.

Assistant Editor: FRANK PINK

MOTTO:—*Mens Sana in Corpore Sano*—A SOUND MIND IN A SOUND BODY.

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EDITORIAL.—I am always pleased to receive Contributions, Literary and Pictorial, for consideration. Where payment is desired, the Contribution must bear note of amount required. Prompt consideration will be given and an early reply forwarded.

THE HEALING POWER OF NATURE.

By S. T. ERIEG.

REGENERATION is one of the most profound phenomena of Nature. This mysterious process is continually going on within and all around us. While there is a continual wasting away, repair is constantly taking place. So long as the repair equals the waste there is a normal condition, but when the waste exceeds the repair, disease ensues.

The work of healing is a silent one, like all of Nature's processes, and is carried on in all forms of life. All great things are done silently, and we scarcely know them until they are accomplished. Great things are not formulated in the streets, among the crowd, or proclaimed from the house tops. The infant, the adult, are the silent result of God's great work. The chick in the shell silently undergoes the process of incubation untila perfect chick is formed.

All Nature undergoes this silent process. The green fields, forests and mountains were silently formed. God is not only in the great storms of creation, but in the "still small voice."

The work of repairing the worn-out tissues of the animal and vegetable organisms is continual and silent. If you should cut a piece from a tree it will, in a short time, heal over and new bark will form. Even should a tree be entirely cut down, it will recuperate by sprouting again, sending forth shoots in place of the old tree. The simple healing of a wound is a good illustration of Nature's healing art.

What a wonderful natural process is healing! When an injury happens to the body, the head station is immediately notified and the requisite materials are sent to make the necessary repairs. A broken bone grows and becomes as before. Impurities are removed from the system in a wonderful manner. Providence has provided wonderfully for man and beast, bird and insect.

The healing of a wound is but an example of this mighty healing process of

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Nature. Nature will, if not hindered in any way, make all necessary repairs. But man sometimes in his impatience to assist Nature, retards its working. A blow with an instrument on the person of an Indian will shortly heal, while the same blow to the white man will perhaps carry with it death. Too often in the case of a wound, lotions are applied to heal, which, in reality, retard its healing. If the system is kept pure, cuts will heal of themselves by simply keeping them clean.

Sometimes the mere prick of a pin will cause death, while the amputation of an arm or leg will not. This should be a warning to keep the system pure and free from those impurities that cause trouble.

The hair, nails, epidermis, in fact, the entire body is constantly undergoing repairs. While man is the greatest of God's creation, the process of regeneration seems more limited in him than in some of the lower animals, yet man is gifted with superior knowledge to enable him to care for himself above all other creatures. The crab, if it should lose a leg or two, will grow new ones. The snail can grow new eyes. Salamanders and lizards can do still better and grow parts of bones and muscles.

God has made wonderful provision for His creatures. We read that not a sparrow falls to the ground without His knowledge. Valuable lessons are to be learned from Nature if we will but study what is continually going on around us. If we carefully observe we cannot fail to see that the power of healing belongs to Nature alone, and must come from within.

We still keep learning. At a meeting of the Select Committee of the House of Lords, to which Lord Reay's Bill for the prohibition of smoking among juveniles has been referred, Mr. E. P. Gaston, London manager to Messrs. Funk and Wagnalls, of New York, gave evidence as to legislation on the subject in the United States. He said his sister, Miss Gaston, originated the anti-cigarette movement in America. Since 1888 legislation had been adopted in forty-seven out of the fifty-three States in the Union.

The latter State had now introduced a Bill prohibiting a man from being in possession of cigarettes, or even paper which might afterwards be filled with tobacco. The anti-cigarette legislation now extended to one-fourth of the population of the United States. It made both shopkeepers and children responsible, but the law was winked at as to the responsibility of children. He thought the law had acted as a powerful deterrent. Cheap cigarettes, witness added, were drugged. The cigarette was a noxious article because of the cheap quality of tobacco used and the filthy conditions under which they were produced.

"You ought" he concluded, "to prohibit the sale of cigarettes imported from America. The American cigarette is the worst thing our country sends to you—worse than Chicago tinned meat."

A representative of the *Daily News* subsequently interviewed Mr. Gaston on the subject:

"As a rule," he said, "the work is carried on by low class Italians, who prowl about the streets of the City with bags slung over their shoulders, into which they pitch anything they can find that has a semblance of tobacco about it. Cigar ends, cigarette ends, 'quids of tobacco' thrown away by those who habitually chew—anything and everything of the kind that can be picked up in the gutter or on the floors of the saloon bars is collected, and in due time finds its way back to the "factory," where it is thrown into a hopper with a little genuine tobacco and worked up again for cheap cigarettes.

"The makers of this vile product say they sterilise the mass, but expert analytical chemists have said that this is not so. Further, these same authorities have detected amongst the contents of the cigarettes quantities of belladonna, opium and cocaine, with which the tobacco has been 'doped.' The tips of certain cigarettes are immersed in a solution of cocaine, which produces a peculiar hazy, benumbing feeling on the smoker, and these cigarettes are popular with boys.

"The number of cases of insanity amongst boys who smoke them is amazing. Many social reformers in America class the cigarette as a greater curse than drink."

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THE STRENUOUS PRESIDENT.

A characteristic snap shot of the sturdy President of the United States delivering a speech from a table. President Roosevelt has just been distinguishing himself by running a quarter mile to meet his recently married daughter on her return to America.

THE WHITE SCOURGE.

Treatment of Consumption in Sanatoriums.

[*The opening recently of a new sanatorium for the treatment and cure of consumption by the King has again drawn attention to the terrible ravages of this deadly disease. The following article gives a very good idea of the natural method of combating this world-scourge in a modern sanatorium such as that opened by His Majesty at Midhurst.*—THE EDITOR.]

OF the many modern developments of the Science of Medicine, perhaps that relating to the cure and prevention of consumption is the most remarkable.

Consumption of the lungs has been well called our "National Disease," for it accounts for more deaths than small-pox and all the other fevers put together. No less than 10 per cent. of the deaths that occur at the present day in the United Kingdom are attributable to this cause alone.

Until within the last five years consumption was considered an almost incurable disease, and a man being told that he was so suffering, would at once think of making his will and preparing himself for the worst.

To-day, it is recognised by the Faculty that consumption is not incurable, and under proper treatment even those in the last stages of the disease may reasonably look forward to many years of useful work.

This great change has been brought about by the adoption of what is now known as the "Open Air Cure," and in order that the treatment may be sufficiently carried out, open air sanatoriums are being established all over the country.

The three essentials of the treatment may be thus summarised:—

Fresh air,
Good and proper dietary,
Absolute rest.

Drugs and medicine are rarely used, and only administered to those in a very critical condition, though in the case where a patient is unable to take proper food, cod-liver oil or an emulsion may be resorted to.

The "Treatment" appears so simple that one is naturally led to ask whether it would not be possible to carry it out in one's own home. The experiment has been made, and, in some instances, with some success, all signs of activity having after a time ceased, but in far too many cases the attempt has ended in failure. The reason is not far to seek.

From the very beginning, it is necessary that the patient should accustom himself to living an out-of-door life; sitting in one's room with the window open is not enough. Fresh air has been said to be the food of the lungs, and one must see to it that they be not starved.

Then again, the dietary must be of proper sort. Consumptives are as a rule but poor eaters, and pre-disposed to the avoidance of all fatty foods. This aversion must be overcome, and a patient should accustom himself to eating twice as much as an ordinary healthy person; indeed, if success is to be achieved, nothing short of a system of judicious stuffing must be engaged in.

Further, it is necessary that a patient should be quite cut off from the usual distractions and disturbing influences of home life if proper rest is to be enjoyed. And lastly, the whole life of a patient for the time being should be under strict medical supervision.

For these and many other reasons then, it is advisable that a patient should be induced to go into a Sanatorium, where he will be under proper control, and receive all the attention that his case demands.

In order that the air inhaled by the patient may be as free from dust, smoke, and other atmospheric impurities as possible, it will be generally found that the site chosen for a Sanatorium is many miles from either town or railway station. Very often it is situated at an altitude of

some hundreds of feet above the sea level.

The building consists as a rule of some two storeys; the kitchen, servants' quarters, etc., being separate from the bed-rooms; and there is one common dining-hall.

The bed-rooms have, in nearly all cases, French windows, facing south, so that the beds may be wheeled out on to the balcony or verandah. The walls are painted and can be washed, while the floors are of polished wood.

A washingstand, chest of drawers with looking glass, a small table and chair, together with a strip of carpet at the foot of the bed, comprise the only furniture. At the back of the room, facing the French windows, will be found another door, opening on to a corridor, leading to the various bath-rooms, of which there are a number. The doors of the bed-rooms are kept wide open the whole night long, irrespective of the weather, so that the patient may be said to live in the open air, both day and night.

OUTDOOR LIFE.

The grounds attaching to a Sanatorium will often consist of some thirty acres or so of moorland. Here will be found paths of every gradient, so that proper walking exercise may be afforded the patient who has reached that stage. At first he will only be permitted a walk of say a hundred yards a day on level ground. This walk is gradually increased until at the end of three months, a patient will often be found taking a "stretch" of three or four miles outside the grounds. The Sanatorium pace is two miles an hour, and this should not be exceeded without first obtaining the doctor's sanction.

Scattered about the grounds in sheltered spots, kiosks are erected. These are furnished with two deck chairs and a small table with perhaps a shelf where a patient may have a book or so. These kiosks or shelters are often used for sleeping in at night. Seats and benches are also placed at convenient distances apart, along the paths, so that at the first feeling of fatigue a patient may rest awhile. In many Sanatoriums the patients carry a small square of carpet about with them, so that they may not be deterred from sitting down because of the dampness of the seats on a wet day. A safer seat is afforded by the portable, automatic chair. Whether it is wet or fine, exercise is always taken.

Among the many objections raised by those who are opposed to going into a Sanatorium, the exposure to the cold and the continuous "stuffing," stand foremost. "They couldn't endure the cold," and as for the "overfeeding," "they could never stand it." One need have no fear upon either of these two points.

In the first place, a patient is never allowed to get cold. When resting he is well wrapped up in shawls and rugs, and from time to time hot water bottles are distributed for keeping the feet warm.

Cold air is not injurious, however delicate a patient may be, and in a Sanatorium you rarely ever hear of one catching a cold.

THE STUFFING.

Then as to the "stuffing." This at first is very often a real difficulty, but after a time the patient will accustom himself to it, and trouble will cease to exist. Indeed, it will be found that after the first few weeks, the patient will eat with an appetite, and if he has previously suffered from dyspepsia this too will, in time, disappear.

And now a few words as to the actual routine and life in a Sanatorium.

The day is generally started by a maid coming round with a glass of warm milk. This she does at 7 o'clock. The nurse follows, when temperatures are taken, and the state of one's pulse and rate of respiration are recorded on a chart which is specially kept for the purpose. Shortly afterwards, the doctor makes his morning call and decides as to the patient's conduct for the day, his decision being entirely guided by a reference to the chart. If the doctor's reading be a favourable one, the patient will then proceed to take a warm bath, followed by a cold sponge down. This is never missed, except where a patient is too ill to move, it being regarded as quite an important feature of the treatment. By the time the patient has finished dressing it will be eight o'clock and time for breakfast. The

following with but little variation will be the menu :—

Porridge and cream.
Bacon and eggs.
Fish.
Two ozs. of butter.
Toast, coffee.
Half pint of milk.

The meal is taken in the common dining-hall. The doctor and nurse will be present, and they will see that the patient does not shirk any part of it, one or other always remaining till the meal is finished.

The hour after breakfast is passed in attending to one's correspondence. The next two hours will be given up to exercise, *i.e.*, walking about the grounds ; the patient first of all fortifying himself with a glass of milk.

Immediately on returning, the temperature of the patient will again be taken ; should the thermometer not register more than say 99.6, he will be permitted another short walk in the afternoon. It may here be mentioned that one's normal temperature is 98.4. The slightest exertion, either mentally or physically, has the effect of increasing this, and a short walk will often send it up to over 100. Whenever this happens, exercise of any description is forbidden as, of course, the temperature should be kept as near normal as possible.

The hour before and after luncheon will be " rest hour," and the patient reclining on a long deck chair will pass the time in reading. The books read, however, must be of a light character, and works that may have the effect of exciting a patient are forbidden.

The lunch will consist of—

Soup.
Hot and cold joints.
Vegetables.
Puddings.
Pint of milk.

In the afternoon, games are permitted amongst those who are strong enough. In a few Sanatoriums, afternoon tea is not a compulsory meal, but the patient must at least have a glass of milk. The rest of the afternoon is devoted to exercise. At six o'clock the patient returns to his room, where he remains till the gong goes for dinner. During this hour temperatures are again taken. The dinner will consist of—

Soup.
Fish.
Hot and cold joints.
Vegetables.
Puddings.
Jellies.
Pint of milk.

The patient will be in bed at nine o'clock, and a visit from the nurse closes the day.

The foregoing is a fair description of a day's routine in a Sanatorium. One evening a week is set apart for " weighing," and the weight of each patient is recorded in a book kept for the purpose of comparison.

A new patient will generally put on weight rapidly, and a gain of three or four lbs. a week will often be recorded, but after a while, the increase will be less rapid.

The effect of a three months' residence in a Sanatorium will be a lower temperature, increase of weight, and a general healthier appearance of the patient.

It is almost impossible to say definitely how long a patient should remain in a Sanatorium, but it should certainly not be less than six months. Many patients have spent a year or two in a Sanatorium, and only at the end of that time have they been discharged as fit for work. Generally speaking, six to nine months is advised if a cure is to be obtained. Of the patients who remain about nine months in a Sanatorium, fifty per cent. are reckoned to leave quite cured, and at least 25 per cent. are recorded as leaving with all signs of activity of the disease stopped.

H. H. B.

When are we Strongest?

THE lifting power of a youth of seventeen years is 280 pounds ; in his twentieth year this increases to 320 pounds ; in the thirtieth and thirty-first year it reaches its height, 365 pounds. At the end of the thirty-first year the strength begins to decline, very slowly at first. By the fortieth year it has decreased eight pounds, and this diminution continues at a slightly increasing rate until the fiftieth year is reached, when the figure is 330 pounds. After this period the strength fails more and more rapidly until the weakness of old age is reached. It is not possible to give statistics of the decline of strength after the fiftieth year, as it varies to a large extent in different individuals.

ARTICLETTES.

Physical Training for Prison Children.

THERE are many protests against the committal of children to prison. The General Prisons Board of Ireland add another to the number in their annual report, but on somewhat unusual grounds. They believe that the youngsters meet with an amount of kindness in gaol which is not good for them.

"We cannot too strongly express our regret," says the Board's report, "that children of from nine to eleven years of age are still sent to prison by some magistrates, as the above table shows, for such offences as throwing stones into a harbour or in the street, loitering at a harbour or near goods, or trespassing in pursuit of game. Although the common objection of sending children to gaol, viz., the allegation that they 'herd with common criminals,' is absolutely untrue, the practice is deplorable on other grounds. They become for life branded with the prison taint, and being well and kindly treated lose the salutary dread of prison, of which they acquire no experience in its severer disciplinary aspect. All juvenile prisoners are located in a part of the prison entirely by themselves, and have no intercourse whatever with adult prisoners. Those under sentence of a month's imprisonment and upwards are sent to Mountjoy Prison, Dublin, for special reformatory treatment. A considerable amount of time is devoted to school, gardening, and physical drill. They are also taught some useful industry, at which they work in their cells, with doors open, under the supervision of specially selected officers. Having regard to the provision made by the Legislature to enable juvenile offenders to be dealt with otherwise than by imprisonment, it is to be hoped that the committal of children of tender years to prison will soon cease."

For Insomnia.

SUFFERERS from insomnia should try cayenne pepper sandwiches. Cut a slice of thin bread—a plain biscuit may be used—butter it generously, and add a liberal sprinkling of cayenne pepper. Cover it over with a thin slice of bread, or a biscuit, as the case may be. It is surprising what little inconvenience is experienced, merely a slight smarting sensation in the mouth, which is soon over. The sandwich should be eaten just before retiring, and soon after the sufferer will be asleep. The pepper acts as a stimulant to the stomach, drawing the blood from the excited brain, and inducing a night of refreshing sleep. A cayenne pepper sandwich is much less harmful than drugs, and, when taken in small quantities, is a good tonic for a weak stomach. Bilious headache has also been known to yield to a cup of hot water to which has been added a generous pinch of cayenne pepper and a nip of soda as big as a pea.

Old Drinking Customs.

LORD COCKBURN, in the memories of his time, gave an account of a Circuit dinner at Stirling, during his early days at the Bar. He described how the guests, having drunk their fill, fell insensible under the table. Escape by the door was not permitted; so in order to avoid drinking to excess, he adopted the ruse, shammed drunk, and rolled under the table. While he lay in that position he felt a small pair of hands working at his throat. On asking what it was, a voice replied, "Sir, I'm the lad that's to loose the neckcloths." This speaks volumes for the habits of the times, when at Circuit dinners a servant was specially told off to "loose neckcloths" to prevent apoplexy. To show how prevalent the habit of hard drinking was with women as well as men, it is narrated of an old Gallowegian lady that, riding home behind her husband, both having drunk freely at a friend's house, she fell off while crossing the river, and was not missed by her husband until his arrival at home. As soon as the discovery was made, a party went back in search of the missing lady. She was found on the river shore when the tide was coming in and beginning to trickle into her mouth. On rousing her up, the old lady exclaimed: "No' anither drap, neither hot nor cauld!"

Feeding the Brain.

A HEALTHY brain and an intellectual brain are not synonymous. One may be perfectly well, and at the same time perfectly stupid; a fool may eat like a lower animal, while the giant philosopher barely keeps himself alive. While food is essential to thought, yet the force of food is not converted into thought force. Good thinkers, like good athletes, are usually liberal feeders, but thousands who eat as much or more have very little intellect or muscle. The effect of a diet largely of fish seems to be sedative, calmative, like that of bromide of potassium, or phosphorus, or electricity—like these remedies, producing dullness rather than intellectuality, and inducing a disposition to sleep more than to think; not accelerating, but slowing down, the wheels of the mind, and therefore excellent and adapted for the nervous, and overworked and overworried.

Exercises at 85.

MR. W. W. DUFFIELD, chairman of the Governors of Chelmsford Grammar School, who is eighty-five years of age, stated at the prize-giving that he still practised every morning the same physical exercises he learnt at the school seventy years ago.

WISDOM AND FOLLY IN FOOD,

By E. H. Richards. FOR YOUNG, YOUTHFUL AND OLD.

THE majority of women who throng the shops may be divided into two classes: (1) The careful housewife with a long list, who is appalled at the prices of the restaurant and who tries to finish her day of unaccustomed exercise on a slice of toast and cup of tea, or takes chocolate eclairs or a small ice cream, with the natural consequence of a raging headache, blunted judgment and unsatisfactory purchases; (2) The woman who boards and who means to eat something she likes or something new, and who does not mind the time it takes. She comes into town nearly every day, and she does not travel half the city over in one day, as does the first woman. She saunters slowly along one street or two at most. Her luncheon consists of a medley of croquettes, salads and sweets which could never agree; dishes dressed over so that the original ingredients may never be revealed, and she pays by spending the next day in bed, or perhaps a physician, and her family pay in unhappiness.

BUSINESS MAN'S LUNCHEON.

Two sharply defined classes: (1) Those who believe in steak and chops as best brain and nerve food, and can afford a dollar or a dollar and a half luncheon. (2) Those who believe in staying the pangs of hunger for the least money. These pay 3d. for a piece of pie and some cheese, with a glass of milk or a cup of coffee at 2d. more, and get just as much nutritive value as the other.

FOOD FOR THE TRAVELLER.

Less meat in made dishes, less pastry, less Worcestershire sauce, and more good fruit and well cooked vegetables would conduce to the health of the railway traveller.

FOOD FOR THE CHILD.

Sugar is now almost universally advocated as food for young children, not as amusement between meals, but as part of the dietary, and counted as such. Of the ten ounces of carbohydrates which a child of fourteen requires perhaps four ounces may be in the form of sugar. This is the quantity of milk-sugar which a child of three or four years would absorb if its diet were of milk exclusively.

No sane mother would give her child coffee or wine; why should she yield to its curiosity and give spiced foods and rich gravies?

It is evident that lean meat does not furnish sufficient heat units for normal human life, that very fat meat must be eaten to bring up the calories.

FOOD FOR THE BRAINWORKER.

The man in a camp at hard work in the open air at a low temperature finds pork and pan bread or biscuit none too satisfying and sustaining, while the student, sitting in an over-heated room, with only a short walk three times a day, often at a slow pace, well muffled up, would be unable to digest a quarter of the lumberman's diet, and finds himself clearer of brain with eggs, toast and coffee for breakfast and chicken and rice for dinner. While the food for the brainworker should belong to the class easily digested, it should not be too concentrated or be predigested, so that a large amount is at once available in the blood current.

The usual English breakfast of all kinds of bacon and eggs, with vegetables and hot bread, never fits a man for his best work.

What, then, shall the brainworker eat? A little of anything which his system can appropriate. His table need not be different from that of any other men in appearance. A few things may well be omitted, as rich gravies, sauces, custards, patties, highly seasoned or fried entrees. Fresh bread and pastry should be rigorously banished; otherwise a liberal diet of a few well cooked and well

seasoned dishes at any one meal should give mental vigour.

FOOD FOR THE INFANT.

It is safest to keep to the natural diet for the first year as closely as possible. In the second year some solid food is added in the form of eggs, yolk preferred, chicken, fish, a very little mutton, and the vegetable sources in food may be of rice, wheat. The starchy oatmeal and whole potatoes, macaroni, the cereals carefully chosen, and rusks, brown bread, or if eggs and cream seem to make the little one's diet as costly as that of grown-ups, remember that these few years determine the child's future. The money spent can well be saved later.

SPECIMEN MENU FOR A CHILD OF 4 TO 6 YEARS.

1½ pint milk.	4 oz. orange.
½ pound bread.	2 oz. eggs.
½ pound dry rice (½ lb. cooked).	½ oz. butter.

FOOD FOR THE ACTIVE YOUTH.

The purveyor is usually right when he charges for a young teamster double the board which is ample for a seamstress.

The form in which the food is served is to be that to which the men are accustomed, so that they will eat it. The soldier takes his ration of bread, bacon, or stewed meat and potatoes without "frills" of jam tarts or ice cream.

The Sponge.

A GREAT deal of ignorance appears to exist regarding what the Sponge really is. Not only do many people think that it belongs to the vegetable kingdom, but some go further and cherish the delusion that it is made by man. Therefore a few words describing its nature, fishing, etc., will, we think, be found interesting.

When the Sponge is brought up alive out of the sea, it does not at all resemble the Sponge of commerce. It is then surrounded by an outer skin, a simple, unorganised membrane, in which the pores appear or disappear at the animal's will, or supposing that a Sponge has no will, owing to local environment. It is intersected with canals and cavities, lined throughout by a sticky gelatinous substance called sarcode, of a greyish brown colour and of the consistency of treacle. This the fishermen call the "milk" of the Sponge. By the peculiar properties of digestion and reproduction which it possesses it sustains the life of the animal and propagates its species.

The sarcode is the only part of the Sponge that is alive, the flexible skeleton to which it is attached being inorganic. It is this skeleton which is commonly known as the Sponge. This fibrous material is chemically allied to that spun by silkworms. Through the numerous exterior small pores the surrounding water is drawn, carrying with it the food to the sponge in the form of particles of animal and vegetable matters. This stream of water passes along the interstitial canals to the innermost part of the Sponge, thus passing over a large area of the sarcode, which constantly draws to itself the particles of matter to be presently digested. The water is then taken up by a similar series of canals, the minute vessels gradually branching off into larger ducts, and forced out through the oscule at its surface.

The oscula are the larger holes at the surface of the Sponge skeleton. The movements in the Sponge which cause currents of water to pass through it are produced by ciliary action, that is, the waving in one direction of tiny filaments like eye lashes. The sarcode or living outer and inner glutinous covering of the Sponge skeleton, is possessed of a rudimentary nervous system which causes it to close the pores and suspend the processes of inhalation and imbibition.

The outer membrane in which the Sponge is found has to be removed soon after the Sponge is fished. If this be not done, fermentation, followed by speedy putrefaction, sets in, and from being tough and elastic, it becomes soft and flabby, and with the least pressure the fermented juice oozes out, giving off a most offensive odour. It is then no longer of any use. The organic part of the Sponge, it will thus be seen, has to be taken from it shortly after it is taken from its bed. This has to be done on the fishing grounds.

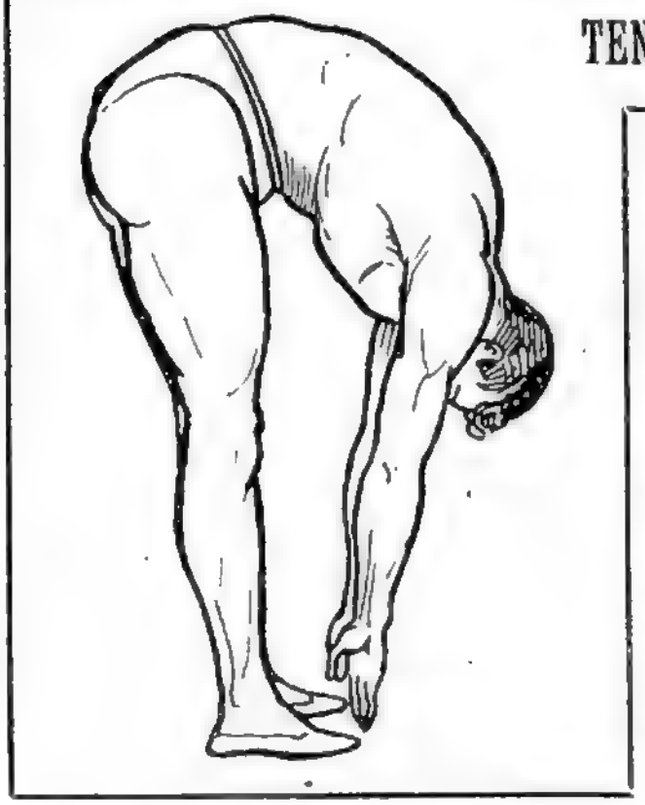
The localities most favourable to the growth of Sponges are in the tideless waters of the Mediterranean. They are fished there by means of the diving apparatus chiefly, but native divers are also employed, and in other places trawl nets and the harpoon are extensively used.

One of the largest importers of Sponges into this country are Messrs. Cresswell Bros., of Red Lion Square, W.C., a visit to whose warerooms proved most interesting and instructive.

Physical Culture in "Owd'am."

THERE is no event in the lives of the scholars of Oldham and district more keenly anticipated than the annual sports, and the enjoyment they take in vigorous and healthy games was again exemplified this year. Over 3000 turned out, and gave an exhibition of the efficiency they have reached in physical development during the past year, under the able instructor appointed by the Education Committee. Their exposition of physical exercises won the admiration of all who witnessed it, and left an impression on the mind of the necessity of such development and the hope that the work might be extended.

TEN MINUTES' DAILY EXERCISE.



1.—Upon jumping out of bed sponge hands and arms, face and neck. Dry quickly. *This wakes you up.*

2.—Open windows (if not already open) and, wearing only the night or other light loose garment, stand upright, heels together, toes slightly apart, arms at sides. *Exercise in the fresh air to ensure supply of pure oxygen.*

3.—Slowly raise arms and body to highest point on tip-toe. Whilst raising yourself take in deep breath through nose. Exhale as you slowly resume first position. Repeat this exercise twenty times each morning. *It is necessary to take in a plentiful supply of oxygen to assure best results from exercising.*

4.—Stand with palms together, and arms outstretched in front. Slowly bring arms backward, raising body on toes, and taking in deep breath simultaneously. Exhale as first position is slowly resumed. Repeat twenty times, taking care to bring arms as far back as possible. *Broadens chest and strengthens lungs.*

5.—Stand with thumbs side by side, and arms down in front. Raise arms as high over head as possible, keeping thumbs together, taking in deep breath while again raising body on toes. Exhale as hands are brought down until they touch your toes, keeping legs perfectly stiff and straight. Repeat twenty times, and persevere a few days until you can easily touch the ground with your fingers without bending legs at knees. *Assists the dispersal of waste matter from the body.*

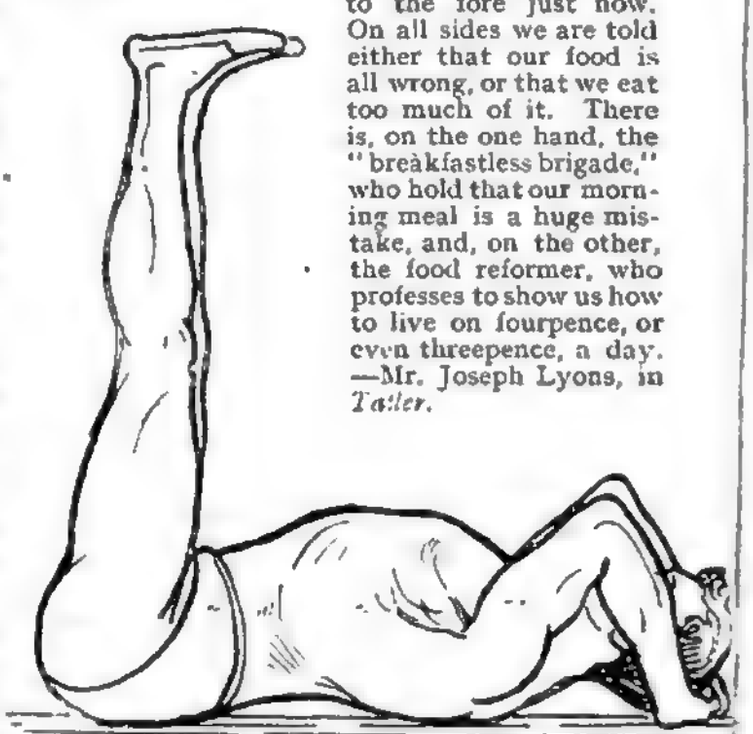
6.—Lie on back on floor, with arms at sides. Raise legs until they are in a perpendicular position. Do this slowly twenty times, or as many times as you can up to this number. *Splendid for all stomach troubles.*

7.—You ought to be warm enough at this stage to face with pleasure a cold water sponge down, and quick rub dry with a rough towel. If this be done prior to dressing, it will prove the culminating move towards an appetite which will demand immediate and most enjoyable and beneficial satisfaction.

W. H. H.

Food Faddists.

THIS is an age of fads. We have the clothes faddist, the physical culture faddist, and above all the food faddist, who is, indeed, very much to the fore just now. On all sides we are told either that our food is all wrong, or that we eat too much of it. There is, on the one hand, the "breakfastless brigade," who hold that our morning meal is a huge mistake, and, on the other, the food reformer, who professes to show us how to live on fourpence, or even threepence, a day. —Mr. Joseph Lyons, in *Tatler*.



A SPLENDID EXERCISE FOR CONSTIPATION.

HOW TO PRESERVE THE TEETH.

By M. D.

[*A well known physician and old contributor to the magazine gives some valuable advice in this article on the care and preservation of the teeth. No man can be really strong if his teeth fail.*—THE EDITOR.]

IT has been justly said that "no woman can be called plain who has a beautiful set of teeth." A few remarks, therefore, upon the care and preservation of a part of our anatomy that is at once ornamental and useful may prove interesting.

More important than beauty is the fact that good teeth promote health, and make the matter of a good digestion possible, without which the most delicate food is made next to useless. Good, healthy teeth are necessary for masticating or grinding the food which is at the same time mixed with the saliva secreted in the mouth. This is really the first stage in the process of digestion, and it is of far greater importance than is commonly recognised.

We cannot attach too much importance to the vast necessity there is to take care of the teeth, and attend to any sign of decay (to which a slight pain may draw our attention as a signal of the fact that serious mischief is going on) to say nothing of obviating the racking pain which will ensue if a nerve be left long exposed.

If a first class physician is preferred for consultation as to any bodily ailment, why ever is a *second* rate dentist so often consulted respecting the defects of these very important organs of our body? The best dentistry is the cheapest, and you will avoid that wretched custom of having a good tooth dragged out merely for the fee, when a little care (or perhaps a dose of medicine in some cases) would have preserved that valuable masticator.

One of the first rules for securing good teeth is that of *keeping them clean and free from food.* Probably the great majority of people clean, or shall I say brush, their teeth only once a day, and that before breakfast; the fact that the teeth require this cleansing *more especially before sleeping* never occurs to them, but nevertheless it is a great fact, inasmuch that any atom of food lodging between the teeth and remaining there during the night is a positive injury both to the teeth and gums.

To begin then to preserve our teeth we must cleanse them in tepid water before going to rest. Never use water that is either very hot or very cold.

Never crack nuts with your teeth. Never take corrosive medicines without using a quill, or immediately rinsing the mouth with tepid water.

Everybody knows that much eating of sweets ruins the enamel of the teeth; it also causes much more direful results, inducing gout and storing in the system a superfluity of fatty matter which one day will remind us of our intemperate habit.

To keep in the gum a decayed tooth that makes it too painful to masticate on that side, only gives undue work to those remaining whole, which, by Nature's law, must only do the portion allotted to them, while the idle ones are being injured by having no exercise. The teeth are just as much benefited by motion as our arms and legs and joints are by walking or by good gymnastic movements.

It is a well known fact that the peasants in North Europe are noted for their splendid teeth. This may be accounted for by the fact that their diet consists mainly of fruit and coarse bread, and that they often make the teeth do work for which we should use a knife.

Brown bread which needs to be well masticated is most valuable for this exercise, as also for the digestion.

These considerations refer to the effect upon ourselves, but there is another side to the question, that of the effect of bad teeth upon others! Nothing is more

objectionable than an ill odour from the breath of one with whom we are conversing, and, unfortunately, a person whose breath is obnoxious is often quite unconscious of the fact.

To avoid a tainted breath should prove a strong incentive, to our younger friends especially, to pay every attention to the care of the teeth.

It is well to consult a reliable dentist at least twice a year, for a deposit of tartar too often insidiously goes on increasing until the whole set of teeth is irreparably damaged, the teeth absorb it and in course of time it causes them to drop out, or what is even worse remain a decayed fœtid bone, injuring both the gum and the entire health of the possessor.

Such a diseased state of the mouth organs affects the eyes, ears, head, and throat, and even the bronchial tubes and the lungs. From this cause and the impaired digestion, consequent upon the failure of the teeth to do their work, the patient not infrequently becomes a confirmed invalid.

This will suffice for a warning not to neglect these important organs of speech and mastication, these factors in facial beauty and in the maintenance of health.

A good dentist will always endeavour to save a tooth, for it cannot but be acknowledged that what Nature has provided us with must be better than any artificial one, however well arranged, therefore it must be wiser to spend on preservation than to spend on renewal.

Without good teeth we cannot masticate, without mastication we cannot digest, without digestion there cannot be nutrition, and without proper nourishment there cannot be health or enjoyment of life.

The old fashioned method we must hope has gone by, when a decayed tooth was extracted as the *only* remedy for the case; now this need rarely be resorted to, for the gum is preserved intact by the fangs and the skilled dentist will crown the most delicate tooth with gold, later on another filling will supersede it, that, no doubt, of porcelain. The only objection to the gold is that the colour is so apparent, otherwise the crowning gives you a solid, good masticator equal to your own tooth.

Why we should keep Strong.

ALL education is physical, for all knowledge comes to us through physical means. Every act of reasoning and judgment becomes a physical fact, and that our mental and moral being is affected by our physical has long since been proved beyond all doubt.

Wickedness is indeed closely akin to weakness, for soundness of morals and mind are more easily maintained in a sound body.

Since ignorance of the laws of physiology and hygiene may readily result in disease or deformity and since temptations are far more difficult to withstand when the body is worn with sickness than when in the full possession of splendid health, we are all forced to admit that the results of physiological ignorance may be grave indeed.

It was Socrates, the Greek philosopher, who actually reproved one of his young friends for being in a poor condition physically—telling him rather sharply that the care of the body was not to be neglected in private life, and that it was a man's duty to pay attention to his physical welfare.

He assured him that neither in any struggle nor in any kind of practical life would he get on worse because he had brought his body into good condition, "for the body is useful in all pursuits which men engage in," adding, "and even in those things in which you may think the body less useful, namely, in intellectual pursuits. Who does not know that, even in these, many men fall into great aberrations through not possessing good bodily health? Nay, weakness of memory, low spirits, ill temper, even insanity, often penetrate the minds of many persons so deeply, through their bad physical condition, as to cast out and dispossess knowledge itself."

Socrates goes even further, for he does not hesitate to inform his ailing young friend that:

"It is disgraceful that any one, through want of attention to these matters, should grow old without seeing what sort of a man he can become by making his body as well developed and robust as possible,

and this no one can do who does not pay proper attention to these things, for they do not come of their own accord and unsought."

Too many of our young men and women of to-day need just such honest and fearless friends as this young Greek was blessed with.

Angry! Well, I suppose he was angry, for he no doubt wished for sympathy and a careful, interested inquiry into his complaint; a chance to tell his symptoms and lean upon the arm of a sympathetic friend, but he found something far better, for he found an honest man who was not afraid to tell him the truth. Let us hope he profited by the sage advice, and in future indulged more in the necessary amount of physical exercise, and less frequently in late suppers and wine drinking—alas! as common among the fashionable youth of those days as it is said to be among a certain set of our fashionable young men and women of to-day.

Gymnastic work—physical culture if you prefer so to call it—does not simply labour for the future; the immediate effect is felt by the body and the mind; for while it renews and invigorates the forces of the body and strengthens the nervous system it gives to the mind fresh vigour and elasticity, and the once brain-weary one may return to his or her mental work rested and refreshed, the mind active and clear, the difficult problem will be easier to solve—the intricate plans easier to lay out, after the minutes spent in wholesome bodily exercise.

But this is only true if the exercise has been in moderation.

Please remember that while moderate exercise will do both the body and brain good, refreshing and re-animating them, exercise in excess will exhaust both brain and body, leaving the body susceptible to disease through its exhausted and hence defenceless condition, and the brain inert; not only dangerously unfit for work but absolutely incapable of doing anything well.

Moderation would be a good text for both sermons and lectures these days, for many indeed are the good things that through our excessive indulgence in them may become strong factors in shaping our ruin—mental, moral, or physical.

Beauty in its best and truest sense is but the outward sign of inward harmony. We all long to be beautiful, and it is our right to make the most of ourselves. Nay, it is more, for it is our duty to multiply every gift and talent God has given us; and the physical side must never be neglected if we would be true stewards.

The preservation of health is a duty, and physical perfection should be persistently and earnestly striven for by us all.

What is Insanity?

THE brain is the most wonderful machine in the world: it is, as inventors say, the last word on animal mechanism, the supreme effort of all creation. And just as the rude machinery made by man inspires dread when it gets beyond control, so does the unhinged mind spread terror in the average beholder. Once the gentlest man on earth oversteps the hazy line which separates sanity from insanity, and conveys his departure by a foolish remark, his dearest friend is ready to fly from him. Derangement of any other organ excites sympathy and draws folks to him. Yet, although ordinary lay folks make such distinctions, it is exceedingly difficult for the physician to say just what constitutes insanity. Indeed, a concise definition is impossible, and no single test of sanity exists. The medical man cannot with trained eye, or sensitive fingers, or delicate instruments, measure his patient's sanity, and he is driven to build his diagnosis of any mental case upon the reasonableness of the manner in which his patient adapts himself to the surroundings in which he is placed.—*People's Friend.*

Alcoholism in Children.

A WELL known physician summarises the results of alcoholism in children as follows: (1) A wet nurse who is accustomed to drinking wine may continue the same to moderation during the period of nursing. (2) A wet nurse who has not been in the habit of indulging in alcoholics must not receive any during the entire course of her nursing period. (3) An alcoholic mother must not nurse her child. (4) Nervous children and those who are suffering from an organic nervous disease must refrain absolutely from alcoholic drinks. (5) Very young children must never receive any alcoholic drinks, except in cases of acute diseases in which alcohol is indicated. (6) Total abstinence should be insisted upon until at least the sixth year. From the sixth to the twelfth years children may occasionally drink a small quantity of very diluted wine. (7) Total abstinence is indicated in the case of older children who are wayward, lazy, and weak in memory. (8) Hereditary alcoholism favours idiocy, epilepsy, and insanity. —*Family Doctor.*

"Real" Sportsmen.

Some Generous Actions of Famous Athletes.

THE sensational termination of the great cricket match between Surrey and Yorkshire, at Kennington Oval on Saturday, July 28th, when, in consequence of the encroachment of the crowd, Haigh, at the instance of Lord Hawke, bowled a wide, so giving Surrey the game, re-calls many a sportsman-like action on field, path, or river.

Such action as Lord Hawke advised was the legitimate outcome of an awkward situation, no doubt, still it was open for him to make objection had he been so disposed.

An instance of fine British sportsmanship occurred in 1856, when Cornell University, who had delayed their entry until too late, were admitted to the Stewards' Challenge Cup as a result of a petition presented to the Henley Regatta Stewards, and signed by the President, Treasurer, and two of the members of the Committee of the O.U.B.C. and the captains of twenty-one Oxford College boat clubs. This petition was backed by letters from the captain of First Trinity and Third Trinity, Cambridge, and of the London, Kingston, and Thames Rowing Clubs. Cornell entered by cablegram, and sailed for England without waiting for a reply, and the concession was a noble one. This Cornell crew "sold" a race at the Vienna Regatta subsequently.

A fine instance of sportsmanship on the cinder track was that shown by Hollins, of Oxford, in the quarter mile race, Oxford and Cambridge *v.* Harvard and Yale, at Queen's Club, in 1899. Hollins, who was not quite fit, had watched the Americans practise for the quarter, and had observed that they made the pace so hot in the first 300 yards, that the only chance England had of winning was to beat them at their own game. He ran the race at an amazing pace, and secured the lead from Fisher and Boardman at the first corner, extending the Americans to the last ounce.

At the turn into the home straight, the three leaders were done, and Hollins' splendid sacrifice of himself enabled Davison, Cambridge, who had been waiting four yards behind, to get up and win in the University record time of 49 2-5 seconds.

In football, there are numerous instances of fine sportsmanship, and the memorable Cup Final of 1882-83, in which the Old Etonians succumbed to the Blackburn Olympic (the triumph of the democracy), is a case in point. Full time had been played, and the match was a draw. A. T. B. Dunn (Old Etonians) had been injured early in the struggle, yet the "Old Boys" agreed to play extra time rather than put the working lads to the expense of coming to the Oval from Blackburn for the re-play. The Olympic eleven were in much the better condition, and extra time saw them returned the winners by 2 goals to 1.

In swimming, a remarkable case of unselfishness is recorded. This was during a race between Captain Matthew Webb, of cross-channel notoriety, and A. Jennings, which was decided in Hollingworth Lake (Lancs), in October, 1881. The match was to swim for five hours, level, and the weather conditions were bad, it being bitterly cold both in the water and on land. Half a minute before the expiration of time, Webb, who had been in ill health for some time, clung helpless and exhausted to the diving board, and the referee magnanimously fired his pistol, the signal for the race to cease. Jennings pathetically remarked that the humanity extended to Webb cost him £200.

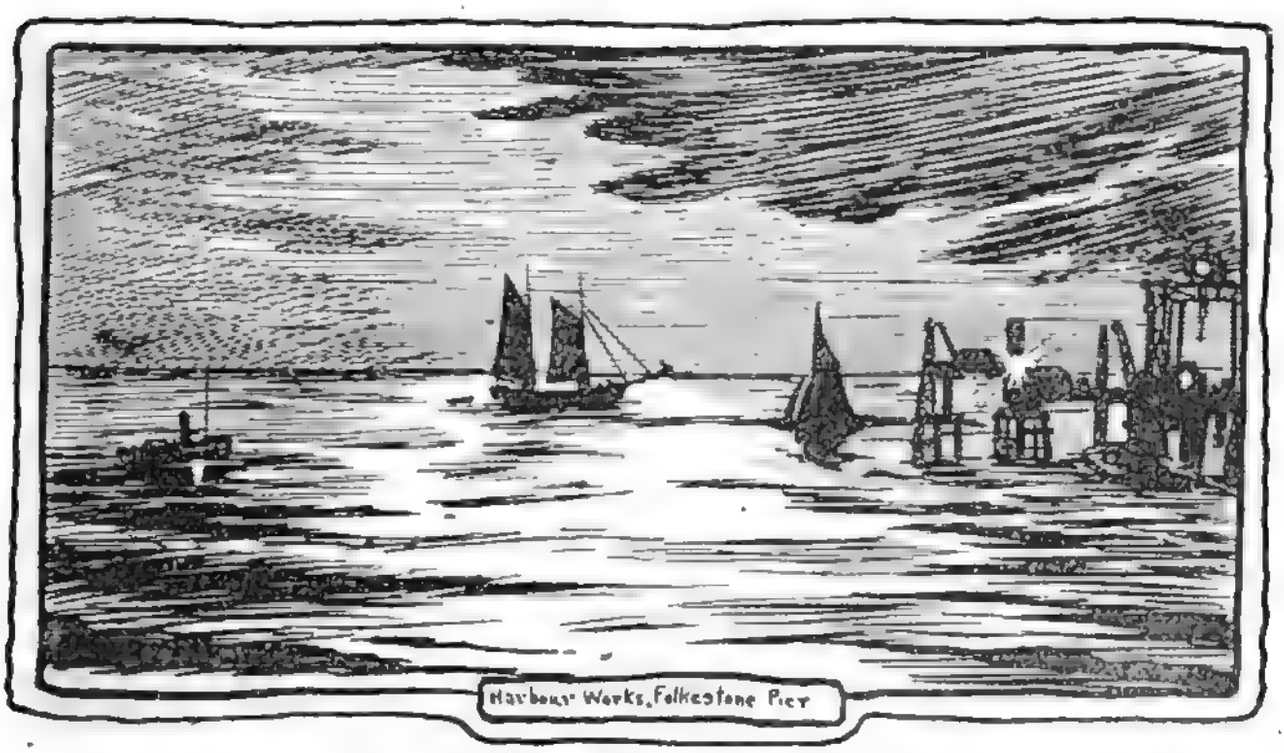
But perhaps, for pure unselfishness, and fine sportsmanship, the following must take the palm. A dispute of a trivial nature between Mr. John Scott, editor of the old *London Magazine*, and a Mr. Christie, a friend of Lockhart, editor of *Blackwood's*, in 1821, led to the latter challenging the former to a duel.

The parties met at Chalk Farm, at night. The signal to fire was about to be given, when Mr. Christie called the seconds' attention to the fact that he held the advantage, inasmuch as he was able to clearly see the silhouette of his opponent's body against the sky line, while he himself was favoured with a dull background. The ground was re-chosen, and fortunately the magnanimous Mr. Christie escaped unhurt, though his unlucky opponent was killed.—*Answers.*

DANGERS OF EXCESSIVE BATHING.

By A. C. Bright.

I AM more convinced every year, said a doctor with a large middle class practice, that more physical follies and risks are crowded into the annual fortnight or month of holiday making than into all the rest of the year; and that in thousands—I might almost say hundreds of thousands—of cases the time would have been more profitably spent at home, so far as health is concerned.



A POPULAR SOUTH COAST BATHING PLACE.

Of course, the reason is that so many people will, in spite of constant warning and experience, go to such violent physical extremes at holiday time. They act on the irrational principle that during their holiday they should do all the things they cannot or will not do at any other time of the year; and especially crowd as much exercise as possible into their few days or weeks of emancipation from the desk or factory.

Thus one man, who during eleven months of the year scarcely averages a couple of miles' quiet strolling a day, will find his pleasure in long daily tramps of twenty miles. Another, whose normal experience of climbing is limited to the domestic—or office—stairs, will revel in scaling all the mountains he can compass in a fortnight; while a third man, who thinks he is doing well if he indulges in a weekly "warm-tub," counts the day wasted when he has not spent two or three hours in the sea.

It is a marvel to me that, quite apart from any special warning, their common sense does not tell such people that the human body, which is a delicate thing at best and so largely regulated by habit, must rebel against such a violent change in its treatment, and cannot fail to have its revenge for such abuse. Year after year these foolish persons return from their holidays feeling considerably worse than when they started; and yet the very next summer they inevitably repeat the same follies, with the same or worse

results. Of course, the consequences are not only serious, but cumulative. Instead of laying in a stock of health and strength to carry them through the year, as they might easily do with a grain of prudence, they really start each year with a health capital still further reduced by the misguided holiday, until the inevitable breakdown comes.

I could give you scores of cases of people who signalise their return from the annual holiday by coming to me. "I don't know how it is, doctor," they say, "but I feel so run down that I can scarcely believe I have been away at all. I wish you would give me something to 'buck me up' and set me going again." Then I smile—to myself, of course—for I know so well what has sent them almost straight from seaside or mountain to my consulting-room.

Only yesterday a young fellow came to me in quite a pathetic state of collapse. He had returned a few days earlier from a month in Guernsey, and ought really to have been in the pink of condition. "Have you been doing too much?" I asked. "Just the opposite," he answered; "I have been leading a regular lotus-eating life, basking on the cliffs and bathing." "And how much bathing did you do?" I continued. "Oh, not much, really," said he; "I had a dip every morning before breakfast, another before luncheon, and a third in the afternoon, and it was glorious." "And how long did you stay in each time?" "Oh, about an hour—sometimes more, sometimes less."

There was the whole thing in a nutshell. Here was a delicate young fellow, who, when in town, seldom enters a bath from one year to another, not only spending three hours a day in the sea, but actually bathing on an empty stomach. Why, it was enough to kill him, and I told him so. "Did you ever shiver in the water?" I asked him. "Oh, always," said the silly young fellow. "I began to shiver before I had been in ten minutes, but then the sun was blazing hot, and I thought it was all right; and, besides, the other fellows would have laughed if I had come out."

So, you see, here was Nature giving this young man warnings three times a day that he was going too far, and yet he persistently ignored them, with the result that he will be under my care for many a long week before he is any good again.

And this, mind you, is what thousands of people are doing at this moment at the seaside, and all the warning in the world won't teach them elementary prudence. It is only the strongest people, who are accustomed to bathing, who can afford to stay in the water more than twenty minutes or half an hour at a time. You may continue to enjoy your bath some time after this period has elapsed, and naturally you don't want to leave the water so long as you are enjoying it, but by exceeding this limit you seriously reduce the subsequent reaction, which is not only so delightful, but is the surest evidence that the bath has done you good.

All bathers will be wise to bear this test in mind. If a warm glow does not almost immediately come after leaving the sea they may be quite sure they have stayed in too long, and they will do well to reduce the duration of their next dip. A little observation will thus enable them to know exactly how long they can stay in the water with the maximum of benefit. If a glow cannot be raised at all and the skin assumes a dusky appearance, they may know quite certainly either that they have stayed in far too long and that their bathing has done them harm, or that they shouldn't bathe at all.

A most salutary rule is always to leave the water the moment they begin to shiver. Never mind how tempted they may be to remain, or how they may fear to look nervous or foolish—out they should come at once, dry and dress as quickly as possible, and take a brisk walk or run.

As for the too popular dip before breakfast, in the majority of cases it is simply suicidal. If you are of mature years and "as strong as a horse," it may do you no harm, although even then it is well to avoid it; but for anyone under, say, thirty, who is not perfectly robust, it cannot fail to be harmful. At the best it is almost sure to make him no good for the rest of the day, while it may have far graver results.

Although sea bathing is a fine tonic and health-giver to the strong, it cannot be too seriously insisted on that, especially in our uncertain climate, it is risky for those who are not robust, and for the delicate it is full of danger. In fact, the two latter classes of people would be wise only to indulge in it under medical advice.

It is thus easy to see that, where people of all ages and degrees of strength of constitution practise sea bathing recklessly at all hours and under all conditions and without any regard for consequences to health, it must inevitably be fraught with danger, and the chief element of danger is perhaps over-indulgence. I have known young people who ought certainly not to have spent more than a quarter of an hour daily in the sea have as many as four dips in a day, averaging, perhaps, three-quarters of an hour apiece. I have seen them shivering and gasping and have ordered them to come out, but, bless you, they only laugh at me.

They are so wise, these youngsters.

And what is the result? Hundreds of lives are sacrificed each year to this recklessness. The seeds of consumption are sown; some collapse from heart failure, others are seized with cramp and pay with their lives for the ignorance or folly. I am quite satisfied that the majority of lives that are lost annually through cramp are sacrificed through an ignorant or wilful disregard of the common sense rules I have laid down, especially that against staying too long in the water. And even when the practice of excessive bathing does not involve direct and immediate danger, it frequently leads to a serious loss of flesh and strength.

The Cambridge-Harvard Match.

WHEN England and America come into competition the world is anxious to look on. The International 'Varsity eight-oared race between Cambridge University and Harvard is to be a friendly contest in the best sense of the word, and although the fateful day is still a month ahead, already the interest of some enthusiasts is consuming. In a temperature that is almost overpowering to most people, the banks of the Thames at Bourne End have latterly been crowded with people anxious to see the crews set afloat each morning and evening.

To the regular boating man it is well known that no fast rowing is likely to be seen for some days, but still the people gather around the American boating quarters at Shaw's to witness the crew get afloat, and to listen to the somewhat strange jargon of the demure little coxswain who weighs about 7 st. American coxswains do not address their oarsmen in the English style. Theirs is nautical language—"Port oars," and "Starboard oars." It is no new thing. These strange (to average English ears) orders have been heard on the Thames at Putney and Henley years ago, although to the present generation it seems to be a situation of new and supreme delight to stand by and hear the mild little autocrat of the boat issue his instructions as she clears the bank.

To see the crew whip up their boat with one flourish of combined action, and lift the craft above their heads prior to dropping her deftly into the water, all the men standing on one side, also seems to take the general fancy, as does the clever fashion in which the boat is lifted out of the water after the practice is over. Equally fascinating is the manner in which the oarsmen get on board and ashore. They are so quick that they have completely non-plussed the vigilant snapshot photographers up to the present.

Cambridge are also much sought after but as they are boating from Mr. R. C. Lehmann's private boathouse opportunities for witnessing the mode of procedure in getting afloat and ashore are not open to the general public.

Up to the present there has been no chance of gauging the form of the rival sets of oarsmen. Harvard had not rowed together for six weeks before Monday, and are still what James Wray, their coach, describes as a "green" crew. That they have the makings of a fine combination appears certain but it will be some time before they will be seen at a racing pace. The weather has been so hot that Coach Wray does not like it. He was out sculling with the crew yesterday and came back dripping with perspiration.

"It is no hotter than we are used to," said Wray to a *Daily Chronicle* representative; "but it is a moister heat, and more oppressive. I don't like the place as a training quarter."

D. C. R. Stuart, the stroke, who has done so much rowing this season—he competed in eight races at Goring Regatta—shows no ill-effects from his hard work. He has gone up 2 lb. since he arrived at the training quarters at the Quarry Hotel.

The Harvard men have had to bathe in ostler's fashion after their rows, viz., from buckets of water. This is to be remedied. Temporary shower baths charged with Marlow town water are to be fixed up for their benefit in the boating quarters. It is worthy of note that D. Filley, the stroke, went to school at Rugby, and Morgan, the belated No. 3, is an old Harrovian, although both learnt their rowing in America. The Americans have been deluged with questions about their training diet. They disclaim any idea of making eggs a speciality, but one scribe has managed to ascertain that onions cooked in various forms are a feature of the menu. Jas. Wray was a most surprised man on hearing it.

WHERE MEN AND WOMEN ARE RE-CREATED.

The World's Greatest Sanatorium.

ABOUT thirty-six years ago an enterprise was set on foot in Battle Creek, the influence of which has extended from Michigan over the whole civilised world. This movement consisted in the organisation of an institution then known as the Health Institute, the purpose of which was to represent to the world the art and science of health getting and health preservation on the highest level made possible by the present state of human knowledge. The promoters of the enterprise were a few persons who recognised the need of active missionary endeavour on behalf of the various reforms pertaining to the habits of life, especially diet, rest, and the substitution of rational methods of healing for the prevalent, almost universal, confidence and resort to nostrums, magnetic healing, and quackery under various guises.

From the small beginning, made in a little dwelling, established in 1866, the work has grown until it has assumed world-wide proportions. There are at the present time institutions in more than a dozen different countries, numbering in all, with their various branches, more than sixty establishments, in which the rational principles of diet, dress, and the treatment of the sick as taught and practised at the Battle Creek Sanatorium are faithfully represented by physicians and nurses who have been trained at Battle Creek, and who have gone out from the institution as pioneers of one of the most needed reformatory movements which has appeared in modern times.

A fundamental principle of this movement is that sickness is not an affliction of Providence, nor a possession of an evil spirit, but simply the consequence of the operation of the great biological law, "Whatsoever a man soweth, that shall he also reap;" in other words, disease is chiefly the result of wrong habits of life.

Another foundation principle of the Battle Creek idea is that the body is its own physician, or rather, that the divine living energy which dwells in every human being is the healer as well as creator of the body; that the office of the physician or nurse is simply to co-operate with this healing power by the use of those agencies which scientific experiment and practical experience have shown to be most potent and permanently efficacious.

The Battle Creek idea has simply been to gather together in one place and under favourable conditions, all the means, methods and appliances for the treatment of the sick which are recognised in rational medicine, and to utilise these means and methods in a conscientious and intelligent manner.

This institution "presents no panaceas, no 'certain cures,' no secret remedies, and does not 'guarantee' cures in any case. The physicians make no pretensions to extraordinary skill. No claims to marvellous or specific virtues are made for the air, water, or climatic advantages afforded."

This spirit of moderation and humility is refreshing in these days when quackery parades in numerous new disguises. But though Battle Creek may not seek to rival Lourdes, it enjoys nevertheless a salubrious location, with pure air, pure water, and a porous well-drained soil.

The main building is 525 ft. long, five storeys high and 46 ft. from front to back: and at the back is a semi-circular "palm garden," the diameter of which is about one-third the length of the main building, between which and three radiating wings at the back, it forms a comfortable corridor.

Two of these wings are the "treatment buildings," each 150 feet in length, 66 feet in width, and three storeys in height above the basement. They contain the Men's Swimming Bath, the Ladies' Bath, and all sorts of rooms and apparatus for the thorough-going and scientific application of water in every shape and form and in

all different ways. The gymnasium is 120 feet in length, and nearly the same height as the treatment buildings.

The third floor of the bath is devoted to light and air baths. Great attention is indeed given to the skin at Battle Creek. There, at all events, it is recognised that the skin is an important organ of the body with vital functions to perform. Dr. Kellog, the medical superintendent of this great and beneficent establishment, has indeed remarked that "a return to savagery in a mild and systematic way is perhaps the best of all antidotes for a large share of the ills which are the outgrowth of our very much over-done civilisation. The untamed savage is the toughest and most enduring of all animals. The constant play of those most powerful of all vital stimuli, the solar rays and thermic impressions received from the air, give him, not only a healthy, disease-resisting cutaneous covering, but a disease-resisting body as well. A healthy skin means a healthy body. The influence of light is necessary for dermic health. Contact with cold air or cold water is an essential means of skin gymnastics, to train the organs of the blood circulation."

Some further idea of the extent of this establishment and the nature of its work appears from the statement that the total area of porches and verandahs is over thirty-two thousand square feet, or about one and one-fourth acres, affording standing room for more than fifteen thousand people, and furnishing ample room for more than a thousand couches, accommodating as many patients with air and light baths.

This calculation includes the Roof Garden, one of the most practical and attractive features of the institution—beautified in the summer season by palms, flowers, and foliage plants. It is well supplied with reclining chairs and couches for the use of patients, each of whom is required to spend several hours daily in the open air. Patients soon learn to enjoy these air baths even in the very coldest weather. Well bundled up and tucked in by the attendants, they lie and breathe the crisp, cool air, drinking in health, and working up a splendid appetite for the easily digestible, highly nourishing and daintily served foods which are supplied twice, three times, four times, or more a day, as may be called for by their individual prescriptions.

The Kitchen (which is at the top of the house) and the serving facilities are such that two thousand people can be fed at one time. Of the feeding at Battle Creek we may have something to say later.

Adulterated Drugs.

THE Medical Officer of Health for Birmingham told the Chemists' Conference in that city that out of twenty-seven samples of camphorated oil bought for analysis thirteen were more or less adulterated; and one sample of seidlitz powder, "guaranteed to be pure," contained only one-third of the right amount of Rochelle salt.

Camping in the County of Broad Acres.

SPORTS THAT ENGLAND IGNORES.

Are we too Insular in our Sports?

IT is characteristic of our innate conservatism that, despite the high reputation which, as a nation, we have so long enjoyed for all round athletic proficiency and love of sport, there are certain games and exercises, new in one sense but old in another, but not in any sense to be despised, in which we are so far from excelling that it would scarcely be possible to find throughout the length and breadth of the land even a moderately skilled exponent of them.

For illustration one may turn to the Olympian Games, which were held at Athens in the spring of this year. To the detached onlooker, personally unconcerned in the various contests and merely viewing the whole as a spectacle, not the least interesting feature of that remarkable festival lay in the performances of modern athletes in the classic games of the Ancient Greeks. It was noteworthy that in none of these exotic events (if so one may term them) was there a single British competitor, though in each case the field included representatives of almost every country which had sent athletes to the games.

Throwing the Discus, Throwing the Stone, and Hurling the Javelin were the three contests which, by reason of their unusual nature and the historical interest attaching to them, attracted peculiar attention; and, seeing the success with which foreign athletes, other than native Greeks, competed in them, it is a matter of much regret that no British name appeared among the entries. If these "games" have found favour with Frenchmen, Germans, Swedes, Norwegians, Italians, and Yankees, and by them been practised with such good results, why should they continue to be ignored in this country?

Throwing the Discus, as a traditional pastime of ancient days, is familiar, of course, all the world over, for everyone has seen, in picture, photograph, or facsimile, the sculptured "discobolus." It may readily be imagined that curiosity among the spectators at Athens was great to see the famous game, not only played in actual fact, but played in the ancient Stadium, upon the very ground trodden by the god-like athletes who vied one with another for the branch of olive.

The discus itself is of wood, iron rimmed, and faced on either side with bronze plates. Lentiform in shape, it has a diameter of 22 centimetres, or just under 6 in., and a weight of 2 kilogrammes, or just over 4 lb. Two styles of throwing it are now recognised—the "free style" and "Hellenic style" respectively. The latter is an endeavour to reproduce the ancient method, and is based upon the attitude of the "Discobolus"; the former is a concession to 20th century up-to-dateness.

The invention of the "free style" is, indeed, characteristic of the modern athlete. When discus throwing was first revived as a feat of strength and skill, it was fondly imagined that the latest discobolus, exhibiting a fit and proper reverence, would model himself upon his famous prototype, and emulate in the living flesh the dexterous grace of the sculptured stone. Not so, however, the ingenious modern athlete, who speedily discovered, in the person (need it be said?) of a Yankee, that by twirling himself round and round, after the manner of a hammer thrower, and so gaining an impetus otherwise unattainable, he could launch the missile further by many yards than by the traditional method, pose he as gracefully on the pedestal as you please. It is difficult to conceive of any artist finding in the modern discobolus a congenial subject for his chisel; but what would you? We live in a progressive age, and records must be broken, whatever the cost.

One is inclined to doubt, however, writes "A. E. J." in the *Sportsman*, if even in the "Hellenic style" of to-day

the methods of the original discus thrower are truly reproduced. The framers of the rules, basing the latter upon the attitude in which the sculptor carved his figure, have insisted upon the thrower assuming and maintaining, an initiative pose which is so cramped and contrary to a natural pose that one is tempted to think a mistake has been made, and the statue wrongly interpreted. It is surely obvious that no right handed athlete desirous of hurling a disc, or any other missile, as far as possible would prepare to do so with his right foot advanced, thereby depriving himself of all the impetus which body swing would impart. It is more likely that the thrower was wont to stand with his left leg foremost, and just prior to the moment of delivery advanced the right foot. The possibility of the sculptor having depicted the "Discobolus" in an attitude intermediate between those with which he began and ended, his performance does not appear to have been considered.

A VETERAN CAMPER.

Mr. Robert Godfrey, who spends a great portion of every summer in his tent.

As practised at the present day, discus throwing is a game in which men of the heavy, muscular type excel. Sheridan, the American, who was first in the "free style," is a broad shouldered young giant, of thick set, sturdy physique. Jaervinen, victor in the "Hellenic style," is a tall Finn, big boned and powerful; while Georgantas, the Greek, who was second in both events, is a lusty, bull-built fellow, deep chested and strong of arm.

Throwing the Stone differs but little from the modern sport of Putting the Shot. The stone—a lump of Pentelique marble, oval in shape, and weighing a little under 6½ kilogrammes—is delivered, however, with the impetus given by a short run. A line is drawn upon the ground, on which the thrower may tread when making his delivery, but which he must not overstep. Up to this line as much or as little run is allowed as may be desired, and no restrictions are placed upon the manner in which the stone is carried during the run. It must be thrown, however, from the shoulder, and with one hand only.

From a spectacular point of view, Hurling the Javelin is more picturesque than either discus or stone throwing. The javelin is a long spear with a slender shaft and an iron head, pointed but not barbed. Methods of hurling it vary. Some balance it, point uppermost, on the finger, and with but a short run jerk it (as it were) high into the air. Most, however, grasp the spear at the point of balance, where the shaft is bound round with twine for a hand's breadth, and poising it horizontally with backward stretched arm as they run to the mark, hurl it forward with all their might. Properly launched, the javelin flies true, its quivering shaft showing no disposition to turn in the air until the weight of the metal head causes it to curve gradually in its descent, and stick point downwards in the ground.

The javelin hurlers, indeed, were perhaps the most interesting figures of all in the Stadium, the Swedes in particular (who took all three places in the contest) being wonderful adepts at this ancient feat

of arms. Some few who entered for the contest proved themselves clumsy spearmen even at their best, but for the most part the skill and dexterity displayed were remarkable. The fine cast by which the stalwart Lemming was proclaimed victor was announced, indeed, as a "world's record."

Four years hence the next Olympiad of modern days is due, and perhaps by that time there may be some athletes in the field enterprising enough to attain proficiency in the ancient exercises and acquit themselves worthily therein at the Games of 1910. Of the three sports described above, javelin hurling alone can be considered strange. Stone throwing should commend itself to the weight putter as a pleasant variant of his usual practice with the shot; while discus throwing (in the modern "free style," at all events) is an art which should come easily to the expert with the hammer.

The Care of the Eyes.

By Dr. Travis.

IF we were always careful to do as well as we know how, we would get through life with fewer discomforts; but as most of us at times practise what we know to be right, we obtain the benefits in due proportion. By personal experience, I know the principles and exercises mentioned in this article are all right, and I hope their publication may prove a blessing to all who read or hear of them. Try them. We seldom treat our eyes with consideration until forced to do so.

They should be used, but not abused; exercised, but not tired out. Work and rest should alternate to short intervals. Learn to relax. We can shut our eyes, and yet keep them at work, says Dr. Travis. Some folks practise gazing upon what they wish to memorise until they can see it with their eyes shut. That is good exercise for the memory; but should be used in moderation if you value your eyesight.

Close the eyes and relax the muscles frequently, for a few seconds at least; minutes, when possible. When reading, writing, or engaged in any work that keeps the eyes focused at short distance, rest them frequently by looking at objects at different distances and angles. Even a few seconds at a time of such exercise is of great benefit.

HOW DO YOU SUPPOSE

your arm would feel if you hung to a beam by it half an hour or longer without resting the muscles that were tensed to support you? Yet how many who read this are in the habit of reading, writing, sewing, etc., perhaps for hours at a time, with scarcely any rest for the muscles of the eyes that are held in tension to focus at the same distance?

Most people who use glasses consider them a necessary evil; a sort of crutch to assist lame vision. Of course, those who wear them merely because they think them stylish or becoming, are not deserving of sympathy; but, unfortunately, the majority who wear them have reason to do so. If everyone would follow the advice in this article, with few exceptions, they could postpone the use of glasses indefinitely, and many who are now using them could dispense with them within a comparatively short time. If school teachers would drill their pupils daily in calisthenics for the eyes, as well as the rest of the body, the proportion of school children wearing glasses would be greatly lessened.

Take care of your general health. Get plenty of sleep, and as regularly as possible. Remember, the eyes draw their nourishment from the same source as the rest of the body, viz., the blood.

Always close the eyes for a few seconds when changing suddenly to a bright light. Do not face a light to read, write, or work by.

Do not sleep facing a light, not even moonlight.

When your eyes are very tired, bathe them in hot and cold water alternately; first hot, then cold. Apply the hot and cold water also to the back of the head and neck, at the base of the brain. The hot application relieves congestion; the cold stimulates the blood and nerve vessels to renewed activity.

MASSAGE THE BACK OF THE HEAD

and neck, and along the spine. Notice the course of the optic nerve.

Cultivate a cheerful, happy frame of mind, with kindness and love in the heart. The eyes express the emotions. They are indeed "the windows of the soul." From a phrenological standpoint, this is readily understood.

Hold some small object in your hand (a pin will do); look at the head of it, and change the focussing distance by bringing it to your nose, then extending it as far as you can reach, varying from right to left, high to low, and *vice versâ*, describing circles in different directions. While at this exercise, glance onward, lining up with some object at a distance. Vary the distance and direction.

Standing, reach as high as you can; then bend, trying to touch the floor at, or near, your feet. With right hand on floor, let the eyes look at a finger of the left hand, while you bring the finger to your nose, then upward as far as possible, and if not too much strain, back to the nose. After a short rest, repeat, reversing the position of the hands.

It is a good plan to sometimes practice these exercises with one eye closed; then the other; for if one eye is weaker than the other, it naturally permits the stronger to do the work, and only gets benefit in proportion.

Look in all directions—high, low, right, left, etc., in order that every muscle be kept in normal condition.

Maintain a proper position of head and body when reading, writing, sewing, etc. Better rest completely for a few minutes than to double up, trying to rest and work at the same time. If you must read lying down, rest the eyes completely every few minutes; but an erect position is the proper one.

The point to bear in mind is that every muscle should be used but not strained. Never try how long you can look at an object that is close to you.

If you will observe these rules you will be well pleased with results. An occasional washing in weak salt water is very good for weak eyes, and for many affections of the eyelids. About a level teaspoonful of salt to a pint of water.

If any foreign substance gets in the eye, have it removed as quickly as possible. Never rub the eye that has the irritating substance in it. If you can cry out of that eye do so, but let it relax, so the object may float away in the flood. A flax seed placed under the lid will give relief.

Bear in mind, whatever affects the health, especially the nervous system, will eventually affect the eyes.

Straining the eyes may induce headache; but cause for headache is likely to affect the eyes.

Sleeping out of Doors.

Some Hot Weather Experiments.

AT one time the craving for sleep in the open air used to be the monopoly of the poetical young man. Keats slept under the pines on Hampstead Heath, and rose in the morning to write his ode "To a Nightingale." Many a minor poet has been filled with a desire to emulate this feat, but considerations of the damp and the insects and other unpleasant things have kept him to his spring mattress and comfortable pillow.

Nowadays, what may be called "the return to Nature" movement, has set a large number of people wondering how they may make, during the summer months, as healthy a use of the season as possible. The bolder among them go barefoot in the country—in one case at least a gentleman walks the streets of a certain city without his boots and stockings; others hie them to Germany, and there, in a special place set apart, wander for weeks clothed like Adam before the fall.

CAMPING ON THE LAWN.

But for the majority these methods of leading the Nature life are impossible, says a writer in the *Daily Mail*. A City clerk would be instantly dismissed if he appeared without his boots and stockings at his office, and his holidays may not fall during the warm spell. Anybody attempting to make an Eden of his back garden would be dealt with promptly by the police and an unsympathetic magistrate. For the town dweller there is left, therefore, no means of experimenting in the "life natural" except that afforded by sleeping out in the open air.

The simplest method, of course, is to take a mackintosh sheet, a blanket, and a pillow, and arrange yourself for the night on the lawn. As long as your head is well covered, and it does not rain, you can come to no possible harm, and you will wake with the lark, feeling as healthy and refreshed as that bird itself is traditionally supposed to be. A variant of this method is to sling a hammock under a shady tree—supposing always that there is such a thing in your garden—to line it with a large mackintosh sheet, to place blanket and pillow inside, and to get in—a gymnastic feat in itself—wrapping the mackintosh well over the top of the blanket and a portion of your head. Even should it rain you will sleep the sleep of the just, and come to no harm, provided that you do not roll out of the hammock.

In one London garden I know a child and her elder sister have, during the hot weather, been sleeping out in two bed shaped hammocks which were slung from the trees and covered with mosquito netting.

But many persons, while they are anxious to breathe none but the purest air during their slumbers, do not care to risk themselves entirely to the varying temperature of the night. For such people neither of the methods already mentioned would be suitable. Sleeping in a tent is hardly a satisfactory alternative to sleeping indoors, for a tent may be more stuffy and unhealthy than an ordinary bed-room with open windows.

Some years ago an interesting system for getting the maximum of fresh air and running the minimum of risk was invented. It was a compromise between the indoor and open air bed-room. The body of the sleeper was entirely inside the bed-room, while his head was outside. Roughly speaking, the invention consisted of a window with a hole cut in it, large enough for the sleeper's head and the mattress to pass through. With a sturdy nightcap on the head, any one was able by this means to sleep, warmly and comfortably, while inhaling a pure, untainted atmosphere.

Another method, which has the advantage of being easily constructed in most gardens, however small, consists of an open wooden hut, the walls of which compose the three sides of a square. The framework of the hut should be so constructed that the walls are easily removable. The open end of the hut—or the fourth side of the square—is always that against which the wind does not blow. If the sleeper pleases, a piece of canvas can be stretched across the top to act as a roof and obviate all risk of damp.

A BED IN A TREE.

Tree sleeping is probably the most healthy method of sleeping in the open air. A beech or an oak is the best tree for the purpose. Between two branches that are close together and maintain a more or less common level from the trunk a piece of tarpaulin should be stretched and fastened. On this a mattress can be placed, or, better still, a quantity of dried bracken, such as is used for cattle bedding. With the usual blankets and pillow, anybody can here woo the god of slumber with perfect comfort and ease, breathing nothing but the free air of heaven and resting literally as cosily as a bird in its nest.

Bracken is suggested as an alternative to a mattress, which might be spoilt, because it is warm, yields delightfully to every movement of the body, and is deliciously comfortable. Yet another method is to adopt the Eastern system of sleeping on the roof. If the roof is flat a mattress or a camp bed may be used. Otherwise, a hammock may be slung between the chimney stacks. It is almost superfluous to add that this method should not be adopted if there is any chance, even the slightest, of the sleeper being precipitated from the roof.

3000 Miles a Year.

FEW men at the age of seventy-seven can boast the good health and activity of Mr. Arthur Moulds, of Leicester, who would put many a younger man to shame in a test of physical endurance. On the 29th inst. Mr. Moulds will have walked 3000 miles in the twelve months, a feat he has accomplished on several occasions. "I am," he said to a *Daily News* correspondent, "a firm believer in the simple life—that is, in early rising, plain living, and sobriety. I like to catch the morning air not later than 4.30, and I am seldom in bed after that hour. I do not know what fatigue is."

IN THE ARENA OF SPORT.

Rumoured Retirement of Lieut. Halswell.

LIEUT. HALSWELL, the British quarter-mile amateur champion, has, it is rumoured, decided to retire from the running track. Lieut. Halswell's many fine performances are fresh in the minds of all who take an interest in athletics. He has done some splendid running in Scotland, and has, we understand, been presented with a special gold medal by the West of Scotland Harriers in recognition of his two record performances at the club's sports in June.

The Cricketer's Nerve.

"HAVE you noticed what a serious looking personage the man who makes his living by cricket is at the present day?" asks a writer in the *Daily Chronicle*. Things were taken more easily in the past, when the light of publicity did not beat so fiercely on the cricket field. Think of the anxiety to which the professional cricketer or the half-amateur is now subjected. In the first place, he knows that his livelihood is at stake, and, even apart from that, we may assume that he has the ordinary ambition to do well. Having the usual allowance of nerves, he awaits his innings with apprehension, and when he breaks down in batting—supposing that to be his particular branch of the game—he suffers mortification of spirit until he can make amends. The bowler who is the victim of dropped catches suffers in a different way—and sometimes shows it. Perhaps fielding, however, places the greatest strain upon the nerves. Each man is anxious to do his best for his side. He knows that if he misses a catch he will have the reproving eyes of thousands of people upon him, and possibly be hooted into the bargain. He is also aware that the next morning reports of his shortcomings will be carried by the newspapers all over the country. Whether the constant strain caused in this way tends to shorten life is a matter upon which I am not qualified to speak. I do think, however, that crowds might show a little more kindly consideration towards a fieldsman. One may be quite sure that when a catch is missed nobody is more sorry than the man who drops it, and a hostile demonstration is not calculated to brace his nerves for the next chance.

Cricketer's Bad Luck.

THE West Indian cricketer, C. Ollivierre, who has played many valuable innings for Derbyshire, is playing for the shire for the last time this season, and it may be that he will not be seen in the team again. He is suffering with his eyes, and his medical adviser suggested months ago that he ought to give up the game. He will, at any rate, take a rest, as the strain of cricket is too great for his sight. His dashing play will be seriously missed by the none too strong Derbyshire eleven.

DOCTORS in Spain are by no means well paid, and are expected to attend the poorer classes without any charge at all.

A. F. DUFFY,

Whose Revelations re Runners' "Expenses" are causing much sensation.

AMERICAN *v.* ENGLISH OARSMEN.

By an Old Blue.

BY the courtesy of Harvard's captain and manager I have been allowed every opportunity for examining their style with the closest attention. Obviously it is not yet worked up to the point it will reach in some three weeks, but the ideal their coach is aiming at is already clear. They mean to employ almost the same movements in their eight which James Wray, their teacher, employs to such admirable effect in his sculling boat. Everyone who has watched professional sculling of late will remember that Wray got from Putney to Hammersmith faster than any other sculler before or since; so there is not much the matter with his style for the purpose for which it was originally developed. A better specimen of his class it has never been my good fortune to meet. He is a quiet, sensible man, who knows his business; says little, and means every syllable; and never goes too far. He is there to tell the men how to row, and to watch them do it. They have chosen him for that purpose, and for that only; and both sides to the bargain have every reason to be satisfied.

As compared with English oarsmen, these Americans are extraordinarily quick, not only in understanding what they are wanted to do, but in doing it. Anyone who has ever coached his college crew, or even watched a University eight when it received instruction, will agree with me that when an Englishman has been told to do something he proceeds to row on for several more strokes until he realises that he must make a change; even then the change is not always what is wanted. The reason for this is not any lack of real intelligence, and it depends partly upon our style and partly upon our racial characteristics. Our stroke, when perfectly rowed, looks so simple, and seems so easily done, that the hundred details of which it is compacted are often forgotten; but the man who is beginning to learn it knows only too well how many things he has to think of when first he is put on a slide after learning the elements and strengthening his stomach muscles on a fixed seat; and he only gradually discovers that, in order to do some special thing his coach shouts at him, he has to begin by doing something else to make it possible. Our style, in fact, is complicated by that necessity for a perfect blend of swing and slide which Americans have reduced to a minimum, and by that unison of leg work with delicate movements of the hand and wrist which is perhaps our characteristic excellence. In addition to that, the average Englishman constitutionally does things slowly. He very rarely shows the more than military smartness in a boat which Harvard's men are exhibiting every day, even when they paddle her round or back water, at Bourne End. With him, in most cases "watermanship" has been acquired so early that he is quite at his ease in any form of craft; and "getting together" in an eight is not, in his experience, attained by passing every man in it through a steel-clamped mould. I am not to be led away into discussing what "getting together" really is. Nobody knows. But it is certainly attained in this country by eight men who have all most successfully preserved their various personalities while subordinating their wills to one given object. As far as I can see, the only difficulty created by throwing the various numbers of the Harvard crew into a hat, and rowing them in the novel order of those numbers as they came out, would be a physical difficulty of size and weight, and even that tends to vanish in a crew with stroke and bow both as near 12 st. as makes no difference. Stroke must, of course, always be a real captain, a real leader, who can do what he wishes with the men behind him. But in an American crew of the extraordinarily uniformity of Harvard the position of the rest seems to me of very slight importance; and this uniformity has been largely attained by the quickness with which Wray spots a "fault," and the alacrity with which the "offender" corrects it. The necessity for such exactness is clear from the slightest consideration of what is involved by rowing as you scull,

or rather as Wray sculls, which may be different, for when there is not a firm catch at the beginning, on a fixed rowlock, one great rallying point for a crew is lost; and when you use swivel rowlocks there is no "click" on the sill at the finish when the hands turn on the chest, and another even better rallying point is sacrificed as well. Consequently the exact instant at which the work is put on and taken off can only then be simultaneous in eight men if the whole crew are always doing the same thing at the same moment. This one quality is in itself of so much value that I have seen a bad English crew who all did the same thing go considerably faster for a short distance than eight individually finer oars who had never got together. But Harvard have to go from Putney to Mortlake against what has every promise of becoming a first rate crew; and this will be very different from beating second rate crews at Henley. Even if that difference were only an average of 3 in. in every boat's length, it would mean over 6 sec. at the end of the championship course.

Wray's coaching is about as close and careful as any I ever heard. When his men do not quite see the point, he sculls alongside with them, and urges them to do likewise. With astonishing unanimity they obey. They have no real stretchers, by which I cannot but think they lose a little in solidity and drive. But the clogs fixed one on each side of the keelson in their centre seated boat are certainly more in accordance with the sculling tradition that is further emphasised by their spoon blades and swivel rowlocks. They swing forward further than the Cambridge men at present do, with their hands very close together on the oar which may partly account for the fact that at the finish their elbows are farther from their sides than ours need be, and the pull in of the handles with the forearms is very pronounced. We, on the contrary, are taught that when our arms are bent they are only shortened strings; that the bodyweight is not thereby removed from the oar, and that the last shove with the feet on the stretcher is directly transmitted to the blade as it comes out of the water.

When we experimented with a short boat on Dr. Warre's model, one point, at any rate, was clear; unless four bow oars caught the beginning very sharp indeed they never did any good at all. The American boat, built by Davy, of Cambridge, Mass., is deeper and more massive than our usual model, and looks shorter and more snubnosed than she really is (for she is 60 ft.), but this point must relatively hold good, and a beginning that is not firm must have a proportionately worse effect than it would have in our longer boats. It is significant that it was after the short boats came in that Mr. Kelly got over the Henley course faster than any pair-oar had ever done it. On that day I do not believe any professional could have gone the pace. Yet he is of no exceptional physique, and his sculling form was more like our best rowing style than that of any man I ever saw, which means that he got a firm and hard beginning. So that even in sculling the professionals may not be wholly right. There is the further fact that an eight is a much longer craft than a sculling boat, and, taking the fastest Henley records as a test, she covers at least a yard more in every second. It is not, therefore, a proposition which everyone can admit that, even if a given set of motions are proved to be the best for sculling, they ought also to be best for moving an eight. Wray was rightly coaching Harvard the other day about pulling out their finish too fast. They were wrenching it out with their arms and feathering under water in consequence. At their beginning there was also a perceptible hang. I might have thought this intentional but for making certain that their boat stopped between every stroke. It is possibly owing to the fact that their blades are so long on the feather that when they slide up beyond their work they cannot get in without a hang; or, if they do get in, it must be with a slicing blade. Either alternative seems to me incorrect. Decidedly their blades are not firm in the water at the beginning at present; they wobble up and down until they are almost square with the rigger, possibly because these blades are flatter near the loom than any variety of the "spoon," without the central rib, I ever saw.—*Daily Telegraph.*

DO WE SLEEP ENOUGH?

DR. T. DYKE ACLAND has interested all classes by his advice, at the British Medical Association gathering, to sleep longer. Representative men and women whose opinions have been sought agree that most people suffer from insufficiency of sleep, either as a general rule or at special seasons. Devotees of society during the season, Members of Parliament during the Session, and ardent business men complain as a rule that the sleep they get is inadequate.

When the King is at Marienbad ten o'clock is the hour set by the physician for retirement, and His Majesty is awakened at 6.30 a.m. for his first glass of water—which allows a minimum of eight hours for sleep.

Inquiries by the *Daily Mail* have brought some interesting replies.

Sir Alfred Jones, K.C.M.G., head of the Elder Dempster Line, and a man of great activity at sixty years of age, says: "It is my regular habit never to be out of bed after 10 p.m. and never in bed later than 6 a.m. This has served me well for fifty years, as I have never had a holiday during that time."

Sir John Thornycroft, who founded the shipbuilding works at Chiswick and is now sixty-three, informs the *Daily Mail*: "I find it necessary to sleep from seven and half to eight hours. I think this enough for most adults."

SOME OPINIONS.

Sir Charles Scotter, chairman of the London and South-Western Railway, says: "Eight hours are sufficient."

Sir T. J. Lipton says: "I consider eight hours quite sufficient for any man, but personally am satisfied with six and half."

"I have been a sleepless man all my life," said Mr. Hall Caine. "There are periods when I do not sleep more than four hours in the night, and these few hours of sleep are broken by dreams from which I awake tired and exhausted —'like a wet rag.' Occasionally I have a whole night or two of entire wakefulness, but even at the best of times I never sleep for more than six hours during any one night. It is when I most need undisturbed rest that I find it most difficult to secure it."

Mr. Balfour Browne, K.C., one of the hardest workers at the Parliamentary Bar, said to a *Daily Mail* representative: "I make a rule of having eight hours in bed, but I often read for two hours, and often lie awake two hours longer. I could do with more sleep than I get."

Nine and a half hours' sleep is the rule prescribed for the Harvard boating crew; 9.30 to 10 p.m. bedtime, and 7.30 a.m. for rising.

Mr. C. B. Fry says: "The average for an adult should be nine hours. For myself, I take ten if I can get it."

Mr. Eugen Sandow gives an emphatic pronouncement in favour of nine hours.

WHAT SLEEP IS.

Some interesting notes with regard to the bearing of the "dendrites" theory of nerve action on the problem of sleep appear in Dr. Andrew Wilson's "Science Jottings" in the *Illustrated London News* of July 28th. The writer, who takes as his text a lecture delivered by Sir William Gowers, after referring to the old theory of Durham, that sleep was a "natural and recurring anæmia of the brain," proceeds as under:

"The elucidation of the marvellous units—elements not of the brain only, but of the nervous system at large—in the shape of nerve cells or 'neurons,' acting as the veritable batteries of the bodily telegraph apparatus, opened up a new field of speculation regarding sleep, and threw light on other features of our nervous territory. The 'neurons' or nerve cells, and especially those of the brain, present themselves to view as microscopic bodies—living structures, be it borne in mind—consisting of a body from which processes or branches, often

very numerous, are given off. These branches we call the 'dendrons.' In turn the dendrons show little branches, thus causing them to resemble feathers in nature, the dendron itself representing the shaft of the feather, and the secondary branches the feather-bark. To the little branches the name 'dendrites' has been applied, and, as Sir W. Gowers tells us, each ends in a little swelling, or knob, on which itself the more powerful microscopes can detect bud-like projections.

"At first it was believed these brain cells (which let us mark are of very varied ranks and degrees of importance, having regard to the particular share they exhibit and exercise in the work of the brain) were continuous, and connected by means of their branches. This seemed a reasonable view, otherwise it was difficult to account for the passage of nerve messages from one cell or group to others, or from brain to body, or from body to brain, this last duty being carried out by a special branch of the cell which becomes part of a nerve fibre as it leaves the cell and goes forth to the body. But, as Sir W. Gowers puts it, it is not continuity, but merely contiguity, we find in the case of our brain cells. The tips of their delicate branches are merely in contact and, what is more to the point, the contact can be made or broken according to the circumstances of life and the work of the cells.

WHY WE DREAM.

"This is a very wonderful discovery, and we shall see that it leads us nigh to the best explanation of the cause of sleep which can be given. It was noted that such narcotic substances as chlorodyne and morphia cause the dendrites or secondary branches of the brain cells to retract themselves, to grow shorter, and thus to break the association with neighbour cells. In animals which hibernate and sleep through the winter, and whose brain cells must therefore be in a state of suspended activity, the retraction of the branches of the cells is said to be represented in a very typical degree. Out of those considerations has been evolved the latest theory of sleep.

"For when the brain is awake and busy, and messages have to be continually passing between its groups of cells and between brain and body and *vice versâ*, we can understand the need for the close contact of the brain cells. Let fatigue supervene, and the cells become tired and wearied, and then we get the need for repose, secured by the cells switching themselves off from duty, sleep representing the result of this action of temporary withdrawal from business. Such is the latest view of the cause of sleep. If we admit it, we can explain sleep walking, talking in sleep, and even dreaming, by the incomplete separation of the higher brain cells from the lower ones, that act normally under their command."

A Moral Prescription.

YE who would have your features florid,
Lithe limbs, bright eyes, unwrinkled forehead
From Age's devastation horrid,
Adopt this plan—
'Twill make in climate cold or torrid,
A hale old man.
Avoid in youth luxurious diet
Restrain the passions' lawless riot;
Devoted to domestic quiet,
Be wisely gay;
So shall ye, spite of Age's fiat,
Resist decay.
Seek not in Mammon's worship pleasure,
But find your richest, dearest treasure
In God, His Word, His work, not leisure;
The mind, not sense,
Is the sole scale by which to measure
Your opulence.
This is the solace, this the science,
Life's pursuit, sweetest, best appliance,
That disappoints not man's reliance,
Whate'er his state;
But challenges, with calm defiance,
Time, fortune, fate.

HORACE SMITH.

Girl's Remarkable Swim.

MISS CLAIRE PARLETT, who is but seventeen years of age, was responsible for a remarkable feat of endurance recently. She was competing in the Kingston Cygnet Swimming Club's annual long-distance race, and with twelve others left Sunbury Lock at eleven o'clock in the morning. It was not until half-past seven at night that this wonderful girl swimmer left the water, having swum thirteen miles in the eight hours and a half that she was in the water—a feat which beats all previous records for lady swimmers in the Thames. Crowds of people followed the swimmer, who was loudly cheered as she passed through Molesey and Teddington Locks.

Her journey ended at the railway bridge at Kingston, where she was taken into an accompanying launch looking quite fresh and well.

THE "NERVES" OF THE WELL-TO-DO.

[The following article is an extract from a most interesting little work from the pen of Dr. Saleeby. The book is called "The Doctor and the Simple Life," is published by the Pall Mall Press, Holborn, W.C., and costs only one shilling. It should be added to every physical culturist's library.]

IT is the fact that hardly a lustrum passes without the identification of one or two nervous maladies previously unknown. It is also true that these are not difficult to distinguish, and could hardly have been overlooked by such great observers in the past as Thomas Sydenham, had they been rife in his time. Certain students, amongst them being Dr. Max Nordau, who thinks we are all going to the dogs, therefore conclude that our nervous systems are in process of breaking down, and, presumably, that the earth is on the way to becoming a peripatetic madhouse.

Personally I do not share this view, believing that these new nervous maladies are due to the same agents as those of the past, but that, in the complexity of modern conditions, these agents are liable to produce a more varied set of results than formerly. But in referring to these maladies and to the pessimistic inference from them I have not yet made any allusion to the subject proper of this article.

In the present state of neurology—which, owing to the inherent insolubility of the problem of consciousness, must remain imperfect till the latest day—we distinguish very sharply between two great classes of nervous disorder, the *organic* and the *functional*. By an organic disorder we mean one in which there is a visible, material change somewhere in the nervous system—a degeneration, a tumour, or what not. With this class, to which these new maladies belong, I have here no concern, save to assert, with what I believe to be justifiable dogmatism, that hypnotism, suggestion, faith-healing, Christian science, and all other psychic influences whatever are impotent to heal a ruptured nerve fibre or to rejuvenate a degenerate nerve cell.

But in talking of the "nerves" of the well-to-do, I refer, of course, to what we call *functional* disease. We mean to indicate that the malady is not one of structure—that the microscope could detect no change—but is merely one of function. These cases, which appear to be daily increasing, belong to a totally different category from that of organic disease; but, before going further, I must devote a paragraph to a much abused and etymologically indefensible term.

The word hysteria should be abandoned, as any dictionary will indicate to you, for the excellent reason that that disorder which we call hysteria is common amongst men. The name is as bad as it can be. Nowadays we strip it of any innuendo and often use the term functional nervous disease, or *neuromimesis*. This last is a very good name, for we find that these disorders mimic every known form of organic nervous disease — a very remarkable fact, and one of no little difficulty in practice.

Now, hysteria, or neuromimesis, is a reality; there is all the difference in the world between hysteria and malingering or shamming. Furthermore, the sufferings of the hysterical patient are very real, and may be very acute. He or she, therefore, deserves our sincere sympathy: yet nothing, such is the paradox, can be more harmful than sympathy. It is our duty, if possible, to feel sympathetic but appear hard-hearted.

But this plea in defence of the sufferer from "nerves" and all the imaginary disorders that may be subsumed under that term—the imaginary being real to the imaginer—does not prevent us from saying very hard words about the genesis of these disorders.

We must try to be fair, and admit that certain people, of whom the number is probably increasing, are almost foredoomed to hysteria. They are born with unstable nervous systems which may only with difficulty be guarded against hysteria or sheer insanity. But probably the majority of cases of "nerves" are due, in a sense, to the subject's own fault.

If we look broadly at organic nervous disease, we find its main incidence in persons exposed to hard conditions. Their work is excessive; their food badly chosen or inadequate; their cares overwhelming; their sleep too scant. They suffer from over-strain, from over-use of the nervous system.

Now, if we take a similar view of neuromimesis, or "nerves," we find a precisely opposite state of things. The majority of the subjects are well-to-do. Their conditions of life are too easy; they suffer from underwork, lack of interests, lack of nervous exercise, and excessive sleep. Hence it is that there is a feminine preponderance of these patients. Of course, it must be understood that there are many exceptions to these generalisations, but they are true in the main.

It is, of course, an illustration of the old truth, "*In medio tutissimus ibis.*" Overwork is a bad thing, but underwork is not much better. It is a law of biology that disuse of an organ tends to its atrophy, and that some measure of vital effort is essential to health. The well-to-do have long ago discovered this; and if they can find no useful outlet for their energies, they invent useless ones. The men go in for sport—shooting, hunting, athletics—and the women wisely are following suit. I have not yet yet met an hysterical cricketer. The people who suffer are those who naturally tend towards indolence and who spend much of their time in boredom and ennui—to which introspection is often added. "Nerves" is the result.

Having become possessed of a malady, the next thing, of course, is to be cured. And it is plain that the appropriate cure for what is, at bottom, a psychical condition will be not physical, but psychical; not drugs or the knife, but faith.

The new psychology has searchingly analysed and distinguished a fact which it calls suggestion. We are most amenable to this influence whilst in the hypnotic state, but it is in action at all times. It is a factor in the success of all living art, which Count Tolstoi has defined as that by which emotion of some kind is conveyed from one man to another. It largely explains the "psychology of the crowd" and the power of oratory; and it is of enormous importance in medicine.

It is absurd to gibe at faith-healing and Christian science as if there were no need to explain their vogue. There must be some portion of truth somewhere embedded in any craze or cult; it must at least answer to some requirement of human nature; and that Christian science assuredly does. Here, again, the distinction between organic nervous disease, involving material changes in material structures, and functional disease with no such changes, is all important. Christian science cannot remove a blood clot, but it can certainly cure hysteria.

In point of fact, the cure of "nerves" is always essentially psychical. The most successful method, not even excepting Mrs. Eddy's, is that which goes by the name of the distinguished American physician and author, Dr. Weir-Mitchell. We call it the Weir-Mitchell treatment, and the public calls it the rest cure. It includes, I admit, certain dietetic regulations, and also systematic massage, the latter being mainly a substitute for the ordinary exercise which cannot be taken during this badly named rest cure. But the essential part of the treatment is *isolation*. The patient, in point of fact, was being killed by kindness; and the way to cure him is to cut him off from all his relatives and friends, to exclude the possibility of his hearing a single word or seeing a single gesture of sympathy, and to provide him, as sole companion, with a cheerful, *strong minded* nurse. It is not rest he needs, but a more bracing psychical environment. The value of this treatment is enormous, even in its most meagre forms. The mere isolation in a side-room of a hysterical girl who is making no progress in the large ward of a hospital will often do more for her than all other lines

of treatment put together. And yet I must insist that, in our heart of hearts, we should be very sorry for her.

It is a most lamentable thing that all these manifestations of so-called hysteria should be increasing in frequency in Anglo-Saxondom. France, of course, which gave us the great Charcot, is the proper home of hysteria, but nowadays the malady is invading the sterner race north of the Channel and its Transatlantic cousins. In Protestant countries, we may guess, the less emotional type of religion is inadequate in these conditions, and must be supplemented, so that Christian science may be expected to flourish in England and the States rather than in Roman Catholic countries, where there is really no room for it. I by no means unreservedly lament the fashionable remedy in any of its forms, since suggestion is the legitimate and appropriate therapeutic means. But what I do lament is the insurgence of the malady which demands treatment. It would be extremely instructive, from the point of view of philosophic history—or should I say comparative sociology?—to know what were the manifestations of nervous derangement in declining Greece and Rome and Spain. Is it that success and ease and opulence bring with them their own penalty, so that empires decay because their people's nervous system atrophy from disuse? "Ah! why should life all labour be?" asked Tennyson's "Lotus-eater"; and it appears that Nature will have nothing else.

It seems then, that I have simply brought a certain amount of medical observation into line with the conclusions of moralists in all ages. I conclude that I ought to be thankful that I have to earn my own living; that if this is your case you also should be thankful; not that the world is not much the better for the activities of many of the well-to-do and wealthy, but that none of us can be sure—certainly the present writer cannot—that if he were led into temptation by acquiring a fortune to-morrow, he might not fail, as do some men and many women to-day, to give his nervous system that healthy exercise which is at least as necessary for the brain as for the biceps.

Overworked School Children.

THERE is an admirable association in Manchester which provides health lectures for the people, and one of these, delivered by Dr. R. T. Williamson, is noticed at some length by the *Lancet*. The object of the lecture is, in Dr. Williamson's own words, "to draw attention to some of the ways in which the health of school children is impaired when school hours are over." Dr. Williamson rightly lays stress upon the necessity for there being a sufficient interval allowed between the conclusion of dinner and the commencement of afternoon school. He points out how if this interval is not sufficiently long the scholars may suffer from indigestion.

Moreover, we have before us, says our contemporary, the time table of a very well known and quite first class school for girls in which we note: "1.10 to 1.50, or thereabouts, dinner; 2.10 to 3.40 lessons." We do not consider that twenty minutes is a long enough interval between dinner and lessons. Another point upon which Dr. Williamson insists is that there are too many home lessons, or what is the same thing, too much work to be done out of school hours. On this matter we agree with him. Some amount of preparation out of school hours there must be, but in most elementary schools we believe that the time thus employed has been reduced to a minimum. At many more advanced schools, however, both day and public schools, the time given up to home lessons is far too long—that is, if it be added to the hours spent in school.

— — —

Indigestion and Depravity.

WE do not know how much that is charged to depravity is really due to indigestion. One suffering from auto-intoxication, drunk on uric acid, on the poisons and intoxicants generated in his own body, often does not really know what he is about. Nervous dyspepsia is one form of auto-intoxication in which the brain is poisoned by the poisons generated in the stomach. We sometimes hear of a man who has held a high reputation suddenly committing some crime, and we think that he must have been an awful hypocrite all these years. He has not necessarily been a hypocrite at all. It may be that he has simply got into a miserable state of body. His whole system has become contaminated with poisons until he has lost his health; his muscle tone, his nerve tone is lowered, and by and by his moral tone comes down with the rest. A high moral tone depends to a wonderful degree on a high physical tone, a high nerve tone. We are composite beings. Our moral nature, our mental nature, our physical nature—these three elements of man—are interwoven, so that it is impossible to separate them absolutely.

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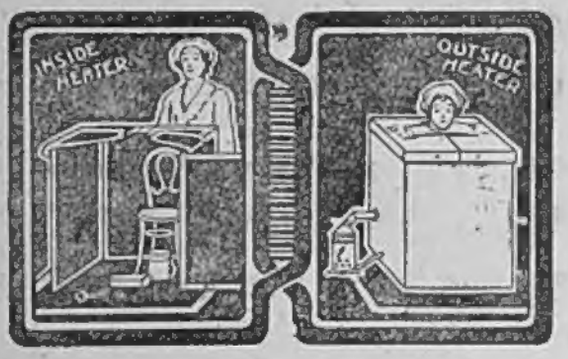

A great deal of the waste arising from the tear and wear of the body is ejected from the system **in the shape of invisible vapour.** This imperceptible but continual and imperative discharge of impurities constitutes **the** great function of the skin. Anything that impairs this vitally important function interferes with health. There is much in the conditions of present-day life to retard the activity of the skin. Consequently waste and poisonous matter is driven back into the organs and tissues, thus inducing or aggravating numerous diseases. The most powerful remedy is undoubtedly the thermal or Turkish bath. These hot-air and vapour baths are now brought within the reach of all by reason of the convenience and low price of

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